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WEEDS TREES & TURF

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Winter Overseeding Warms Up

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WT&T

Cover: Recent discoveries show ryegrass is resistant to bill bugs and sod webworms when endophytic fungi are present in the plant tissue. Illustration by Joel Rogers. See page 45.

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Overseeding and Winter/Summer Transition

Howard E. Kaerwer, research director for Northrup King and Co., gives his observations on the transition from wintergrass to summergrass and how to prepare for transition by early correction of compaction problems, balancing fertility demands and keeping thatch under control.

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Growing Pains in the Condo Market

A WTT survey shows the growth potential of the condo/apartment landscape market is forcing landscape managers to weigh the advantages and disadvantages of contracting out certain jobs and keeping the lines of communication open with condominium boards.

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A Touch of Class

The sand, wind and surf that lures vacationers to the posh Breakers hotel in Palm Beach, wreak havoc for Golf and Gardens Superintendent Joe Inman.

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Seacrest Management: A Success Story

A four-year-old condominium and apartment landscape company has increased its business this year by 50 percent. Its strategy is simple—work hard and be the best.

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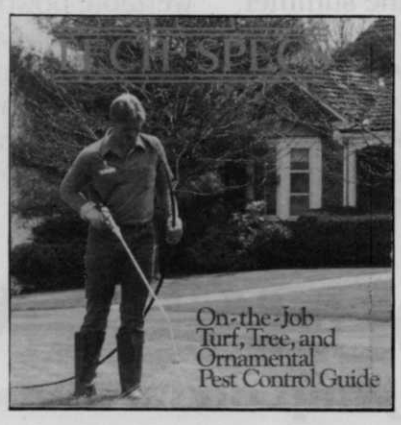
Tech Specs

The Stauffer Chemical Company offers a comprehensive, all-season guide addressing turf and ornamentals. Noted specialists discuss crabgrass, herbicides, chinchbugs and sod webworm, weed control, weed-free gardening and trees. A special section you'll want to save.



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* *Manufacturer's estimated gross horsepower*
† *Model CL-35 available late-1983*

FORD TRACTORS

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OUTLOOK

By Bruce F. Shank, Executive Editor

U.S. Wins No Medals With Olympics Field

Poor communication between the designers of the Los Angeles Coliseum field, site of the 1984 Olympics, and the crew that maintains the field is causing some unnecessary problems and a great deal of embarrassment.

I visited the field in June with editorial advisor and Cal Poly-Pomona Professor of Horticulture Dr. Kent Kurtz. Our conclusion was the maintenance crew may have damaged the design characteristics of the field by topdressing with a sludge-like product referred to as "Nitrohumous". The maintenance program developed by the designer, Redeturf, Inc., of Aurora, OR, did not include use of such topdressing materials without prior consultation. As a result, the root system of the Santa Ana bermudagrass is less than two-inches deep when it should be more than a foot deep. Overseeded perennial ryegrass dominates the turf.

The Hy-Play design is a modified sand rootzone with washed sod, fertilization through the irrigation system, and intensive drainage installed in a gravel base. Dr. Henry Indyk of Rutgers University is a consultant to Hy-Play for the Coliseum field. The field was installed last summer. The center section of the field was resodded after the Raiders' football season ended last fall. Apparently, the topdressing in question was applied this past February over the entire field.

Recently, the Coliseum manager, Jim Hardy, invited Toro Vice President Jim Watson to check the field. Until the month of June, no one from the Los Angeles area extension service or university system had been asked to help with the field.

Dr. Kurtz and I spoke with the contractor for the field, Nick Tavaglione Construction of Riverside, CA. Nick Jr. is very proud of the field, as are other suppliers like Toro and Advanced Drainage Systems.

Soil tests are now being done. The jury is still out, and hopefully a real jury will not enter the case.

The fact remains that poor communication has damaged a field that millions of people will see during the Olympics next year. Los Angeles-area agronomists are upset they were not asked to help with the field. The Coliseum manager is complaining about a lack of service from Hy-Play. The Coliseum maintenance manager, Bob Williams, is keeping quiet, as are other involved.

Talk gentlemen, talk, before time runs out. **WTT**

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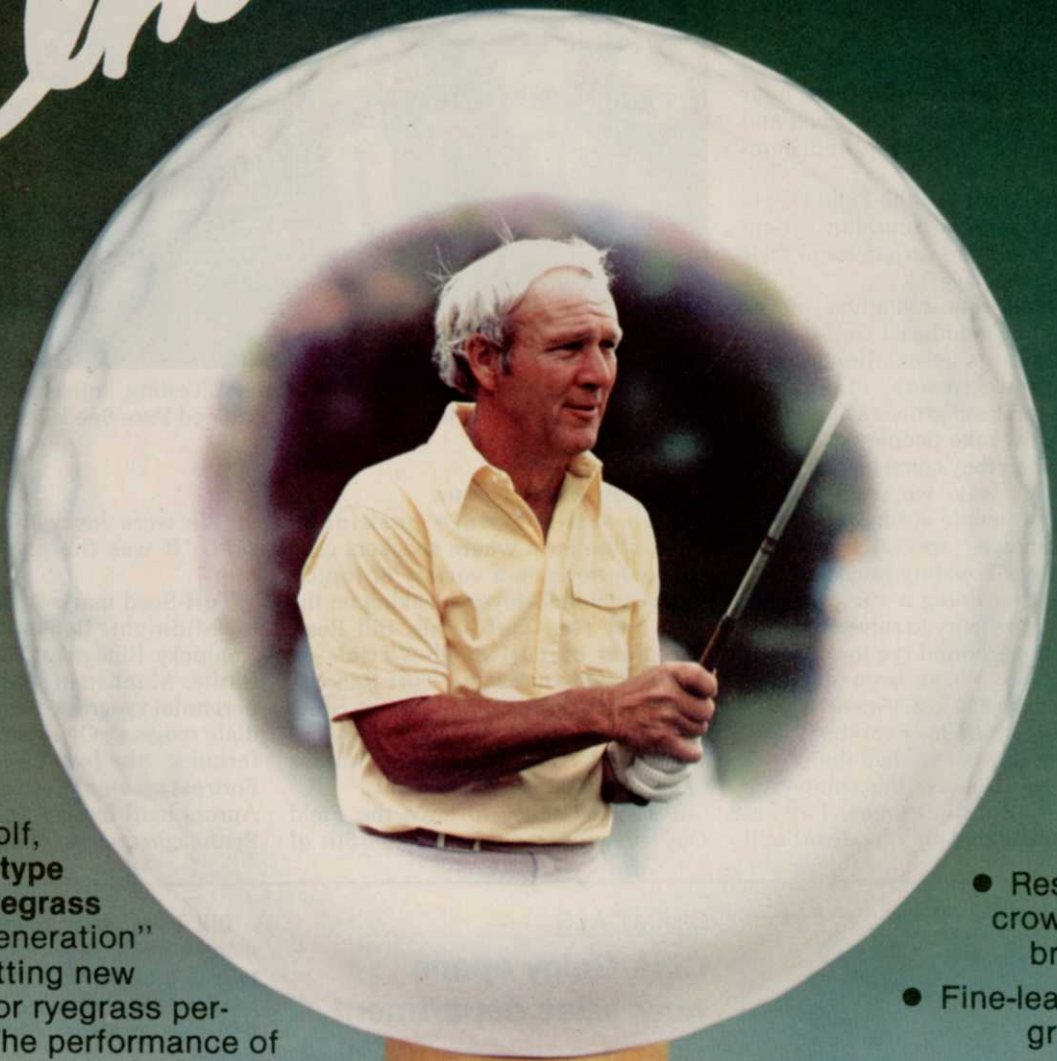
Palmer

Turf-Type Perennial Ryegrass

the beginning of a second legend



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First Turf-Seed Field Day attracts 200

"We organized and did it right," said Dr. Bill Meyer, president of Pure Seed Testing, Inc.

The more than 200 people who attended the first Field Day sponsored by Turf-Seed, Inc. and Pure Seed Testing, probably agree.

The all-day field day brought together a large cross-section of growers and customers at the Pure Seed Testing 28-acre research farm near Hubbard, OR, in June. Turf-Seed and Pure Seed Testing are allied companies.

Turf-Seed designed the Field Day to "have an open discussion about turfgrass and forage varieties and their most effective usage."

Meyer said representatives of the Northwest and Southeast Golf Course Superintendants associations, landscapers, seed growers, other seed companies and sod growers attended.

"We usually take people on tours of the farm when they come to visit," said Meyer. "This way, we were able to show a lot of people around at once."

People showed special interest in the company's breeding programs.

"We've been doing a study for the past eight years to try to solve stem rust on turf-type perennial rye to solve our seed problems. We've been spending anywhere from $50 to $70 an acre to try to solve this problem. Everybody was anxious to see what we had done."

Attendees also saw the company's new turf-type tall fescues, Falcon, Olympic and Rebel and the dwarf and double dwarf tall fescues.

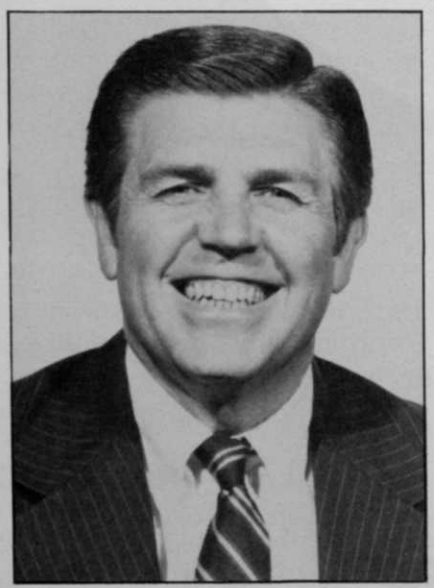
Dr. Wiliam Meyer, president of Pure Seed Testing, introduces speakers and outlines the program at the first annual Turf Seed Pure Seed Testing Field Day in Oregon.

Five stations were positioned around the farm where speakers gave presentations on a variety of topics. They included Meyer speaking on the 1981 and 1982 Turf Trials; Bill Rose, president of Turf-Seed—"Trials on Turfgrass Mixtures and Turf Renovation;" Don Brewer of Oregon State University—"Growth Regulators;" and Tom Cook, also of Oregon State—"1980 National Bluegrass Trial."

Turf-Seed plans to have the Field Day every year, around the 16th of June.

"We were lucky this year," Meyer said. "It was the only day it didn't rain."

Turf-Seed markets Columbia, Shasta, Midnight, Bensun and Sydsport Kentucky Bluegrass; Citation, Omega, Birdie, Manhattan and Manhattan II perennial ryegrass; Oregreen intermediate ryegrass; Olympic and Falcon tall fescues; Shadow chewings fescue, Fortress creeping fescue, Waldina and Aurora hard fescues and Pencross and Penneagle creeping bentgrass.



Bill Liles, sales manager

CHEMICALS

Ciba-Geigy opens new sales department

The Ciba-Geigy Corporation, headquartered in Greensboro, NC, has created a new department to sell chemicals in industries outside the company's traditional agricultural chemicals market.

The new department, Specialty Product Sales, is divided into three sections: Railroad and Industrial Weed Control, Turf and Ornamentals, managed by Ron Rister; Seed Treatment and Animal Health, managed by Harry Galloway; and Technical Sales, managed by Bill Flynn.

Before the creation of the new department, most of the above functions were handled by the Industrial Sales Department.

Bill Liles, sales manager, said, "By using a novel sales program, we hope to gain a bigger share of those specialized markets. Our new products also will give us a competitive edge in the future."

Liles said herbicides for bare ground weed control, such as Atratol, Princep and Ontrack, are sold to such organizations as railroads, manufacturers, utilities, petrochemicals firms and government agencies. Registration for another, Tanzene, was obtained this year.

The company's Subdue fungicide is used largely by nurseries, lawn-maintenance firms and golf courses. It prevents root and stem rot and other diseases in ornamentals, foliage and bedding plants, flowers, conifers and turf. Apron prevents seed rot and damping off in ryegrass and forage grasses as well as other crops.

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Pennfine Poster #2, P.O. Box 923, Minneapolis, MN 55440. (Watch for the other five ads in this series.)

Circle No. 124 on Reader Inquiry Card

GOLF UPDATE

Hannigan new USGA executive director

Frank Hannigan is the new executive director of the United States Golf Association. Hannigan replaces Harry W. Easterly Jr. who retired July 1 from the post he's held for the past three years.

"I'm looking forward to returning to my family business," Easterly said of his retirement. Easterly, 60, resides in Virginia.

Easterly was not scheduled to retire until Jan. 31, 1984, but according to the USGA, the executive committee had little difficulty choosing his successor. Hannigan has been with the USGA for 21 years and for the past three years has been director of special projects.

Easterly served as a volunteer on USGA committees since 1955 and was president of the USGA in 1976-77 before assuming the executive directorship in Dec. 1980.

"My years in this job have been, in a multitude of ways, rewarding," Easterly said. "I plan to continue to make whatever contributions I can to the USGA."

NCA trying to defeat ABA resolutions

The National Club Association and the Conference of Private Organizations are waging a campaign to defeat two resolutions proposed by the American Bar Association House of Delegates.

The resolutions would prohibit judges who are members of private clubs from maintaining their memberships in private organizations with selective membership policies. The other would turn most private clubs into "public accommodations" with little or no control over their own membership policies, according to the NCA.

The judicial membership resolution has been discussed within ABA ranks for several years. Prior attempts to limit judges from membership in groups which practice "invidious discrimination" have been unsuccessful. After two years of study, the U.S. Judicial Conference decided that, while "inappropriate" for a judge to belong to an organization which practices "invidious discrimination," the matter should be left to the discretion of each individual judge.

The other resolution is a repeat of last year's "match of wills" between members of private clubs across the country and the

continued on page 71

GCSAA Chapter survey supports relocation

About 54 percent of the Midwest Chapter of the Golf Course Superintendents Association of America supports the controversial question of relocating the Association's headquarters from its current Lawrence, KS, location.

GCSAA Executive Director James E. McLoughlin tendered his resignation, effective Sept. 1, over the issue of relocation.

The survey also showed of those polled, 80 percent will be life

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NEWS *from page 6*

CHEMICALS

Diamond makes executive appointments

Ronald L. Dezember has been appointed vice president for the agricultural chemicals business for the recently formed Diamond Shamrock/Showa Denko International biotechnology joint venture. W. Dale Wegrich has been named senior vice president for finance and administration as well as interim director of research. John C. Danemiller is now vice president for the animal health business. He was previously general manager of the Animal Health Division of Diamond Shamrock.

The appointments were made by Allan J. Tomlinson, newly named chairman, president and chief executive officer.

In April, Diamond Shamrock, a domestic integrated oil and gas company with interests in coal and chemicals, announced a preliminary agreement with Showa Denko K.K., a Japanese chemicals and pharmaceutical firm, to form an international biotechnology enterprise with an agricultural chemicals/animal health business base. The new company will be headquartered in Painesville, OH, at the former Diamond Shamrock corporate research center.

GOLF

Smith resigns NGF presidency

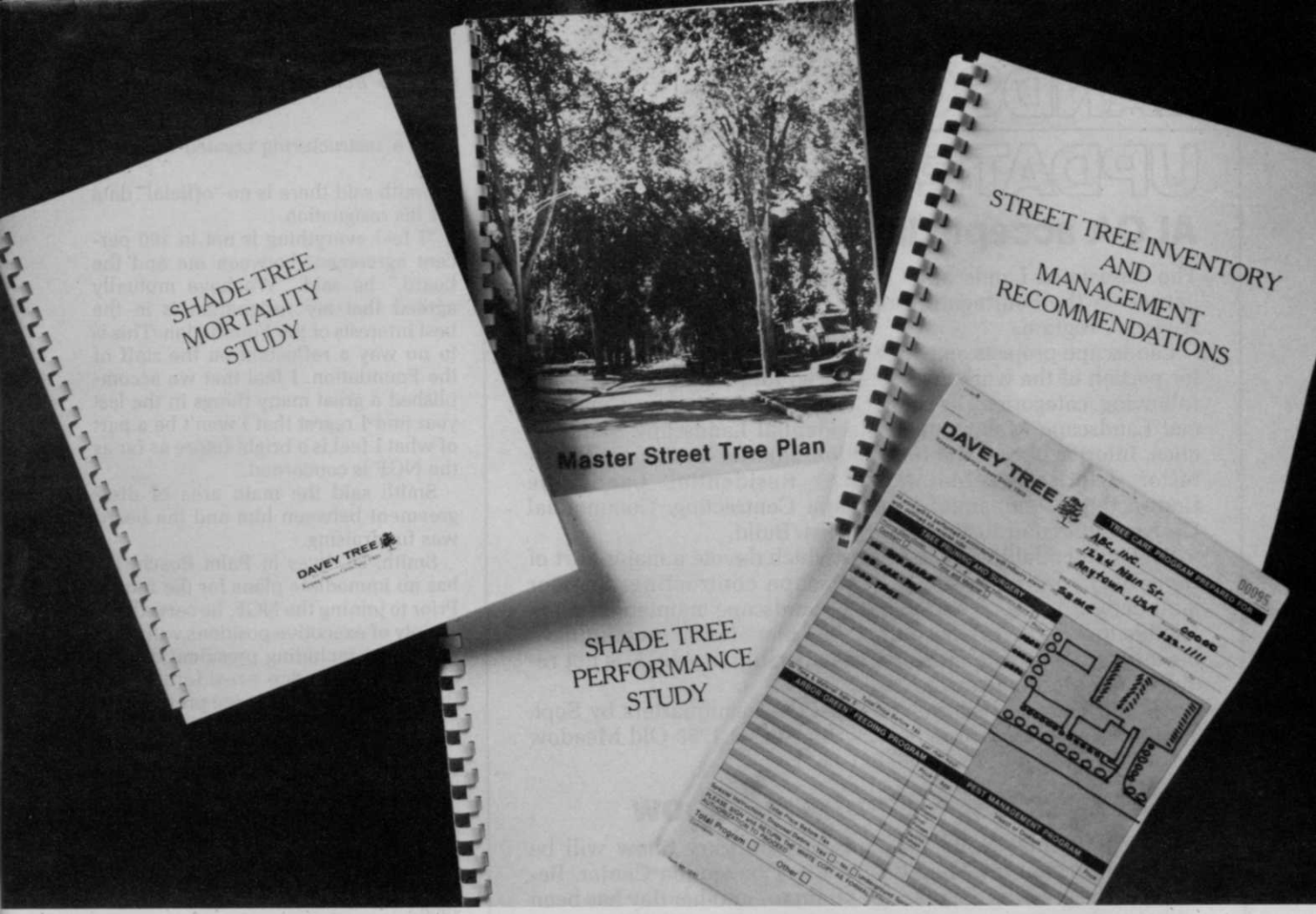
Frank M. Smith Jr. has tendered his resignation as president of the National Golf Foundation, citing "basic differences in policy" between his administration and the board.

In office since May 1982, Smith was the Foundation's first paid president

continued on page 10

It's Calendar Time!

Every year WEEDS TREES & TURF publishes a calendar of turf events. To make sure your organization's 1984 turf event is included free in the calendar, forward it, along with the sponsoring organization's name and a contact person's name to: Calendar, WEEDS TREES & TURF, 7500 Old Oak Blvd., Cleveland, OH 44130, no later than Sept. 30.



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LANDSCAPE UPDATE

ALCA accepts landscape entries

The Associated Landscape Contractors of America is accepting entries for the Fourteenth Annual Environmental Improvement Awards Program.

Landscape projects on which the entrant has executed the major portion of the work may be entered for judging in one of the following categories: Erosion Control/Revegetation, Commercial Landscape Maintenance, Residential Landscape Maintenance, Interior Landscape Installation, Interior Design/Build, Interior Landscape Maintenance, Residential Landscape Contracting, Commercial Landscape Contracting, Commercial Design/Build, and Residential Design/Build.

All commercial landscape firms which devote a major part of their business operation to landscape contracting, interior landscaping, erosion control and/or landscape maintenance, are eligible to enter. Work performed on entered projects must have been done by private industry. Membership in ALCA is not required of entering firms.

All entries must be received at ALCA headquarters by Sept. 30, 1983. For more information, write ALCA, 1750 Old Meadow Rd., McLean, VA 22102, (703) 821-8611.

NLIS sets 1984 California show

The Fifth Annual National Landscape Industry Show will be April 4-6, 1984 at the Long Beach, CA, Convention Center. Because of the growing demand for seminars, another day has been added to the event, according to Chairman Gary W. Weems.

"This year," he said, "the Xeriscape Seminar was well received and well attended with more than 200 people registering. For the 1984 show, several seminars are being considered, and the Irrigation Association will conduct a certification program."

The 1983 show drew 260 exhibitors from across the country and 5,892 showgoers. The NLIS is sponsored by the California Landscape Contractors Association. For more information, write the NLIS/CLCA Headquarters, 1419 21st St., Sacramento, CA 95814, (916) 448-CLCA.

Arizona contractors sponsor first convention

The Arizona Landscape Contractors' Association will have its first convention in its 20-year history, Nov. 3-6 at Rio Rico Resort on the Arizona-Mexico border.

A recent survey of the Arizona membership showed a need for a convention. In response to the survey, convention chairman Mick Walker said emphasis will be on educational seminars and specialty workshops.

"It is clear," Walker said, "that our members want an educational convention. Seventy-six percent of those who answered the survey said the educational program is most important to them."

Forty-eight percent of the surveyed members also indicated that a trade exhibit would be an important part of the convention. A 30-booth exhibit is planned on Nov. 3 and 4.

Convention information is available from the Arizona Landscape Contractors' Association, PO Box 27312, Tempe, AZ 85282 (602) 968-8179.

NEWS *from page 8*

after a restructuring created the position.

Smith said there is no "official" date for his resignation.

"I feel everything is not in 100 percent agreement between me and the board," he said. "We have mutually agreed that my resignation is in the best interests of the Foundation. This is in no way a reflection on the staff of the Foundation. I feel that we accomplished a great many things in the last year and I regret that I won't be a part of what I feel is a bright future as far as the NGF is concerned."

Smith said the main area of disagreement between him and the board was fundraising.

Smith, 56, lives in Palm Beach. He has no immediate plans for the future. Prior to joining the NGF, he served in a variety of executive positions with CBS television, including president of CBS Sports, senior vice president of the Broadcast Group, and vice president in charge of sales.

At press time, Sheridan (Joe) Much was named acting executive director until the board names a new president or restructures the position. Much has been director of field services since September 1982 after serving as a field representative on the West Coast since 1968.

GOLF

Graffis celebrates 90th birthday

Herb Graffis, one of the most widely recognized figures in golf journalism, celebrated his 90th birthday on May 31. Graffis is a co-founder of the National Golf Foundation and throughout his career has worked to further the image of golf. He still enjoys the game

continued on page 14

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GOVERNMENT UPDATE

PLCAA, NAA, NPCA organize to combat "environemotionalists"

Representatives of the three major urban pesticide user trade associations met in late June and took the first steps toward forming a coalition to fight what the group called "environemotionalists."

"Toxic torts are going to be the auto whiplash of the 1980's," Ian Oppenheim told representatives of the Professional Lawn Care Association of America (PLCAA), National Arborist Association (NAA) and National Pest Control Association (NPCA).

Oppenheim, a specialist in environmental law, is acting executive director of the National Environmental Law Foundation (NELF), which was incorporated in Massachusetts in early June to combat what was called "increasing attempts to overregulate urban pesticide use."

John Kenney, president of Turf Doctor, Inc., Framingham, MS, is president of NELF. Steve Keris, director of technical operations for Certified Pest Control, Dedham, MS, is secretary. Board members are Jerry Faulring, president of Hydro Lawn, Gaithersburg, MD, and Dr. Robert Miller, vice president of ChemLawn Corp., Columbus, OH.

In his presentation to the group, Kenney said:

"We, as urban pesticide applicators, use perhaps 5 percent of all pesticides applied in the U.S., but are seen by 95 percent of the public. The public exposure has left us open to overregulation by legislative bodies all the way from city councils to state governments.

He cited costly customer pre-notification laws that have been passed in many localities, bans on aerial application and bans on all professional pesticide applications in some communities.

Ray Russell, director of government relations for Dow Chemical U.S.A. told the group that the solution to the problems facing all urban pesticide applicators lies in the "mobilization of users."

Although actual goals of the coalition have not been finalized, it appeared from the discussion at the meeting that the main thrust would be to take both a "pro-active" and "defensive" posture at the same time.

Representatives of PLCAA, NAA and NPCA hoped to have a prospectus for the group hammered out by the beginning of this month. Working on this document are: Jim Brooks, PLCAA executive director, Bob Felix, NAA executive director and Jack Grimes, NPCA director of government affairs.

Other meeting attendees were: Robert Russell, vice president of government relations for Orkin Exterminating Co., Atlanta; Robert Earley, group publisher of LAWN CARE INDUSTRY, WEEDS TREES & TURF and PEST CONTROL, Cleveland; Dick Williston of the NAA, Wantagh, N.Y.; Walter Money, NAA past-president, Rockville, MD; Ron Giffen, vice president, Lakeshore Equipment & Supply Co., Elyria, OH; Dick Foster, publisher of PEST CONTROL TECHNOLOGY and LAWN CARE PROFESSIONAL, Cleveland; and J.F. "Skip" Skaptason, vice president of PBI/Gordon Corp., Kansas City, KS.

NEWS *from page 10*

whenever he's not writing or on the road at a tournament, convention or speaking engagement.

Representatives of Kubota present the first Kubota M4950 tractor assembled at the company's Compton, CA, plant. The M4950 is the first in a new line of M Series agricultural tractors ranging in PTO horsepower from 47 to 76. The body and engine for the M Series arrive intact from Japan. Assembly workers at Kubota install the wheels, tires and Roll Over Protection Systems (in some models) and customer-ordered options. Pictured are Richard Fadness of Melroe Equipment Co., Gardena, CA (pictured in the driver's seat), Kevin Morioka, Kubota executive vice president and Gene Souza, Kubota sales representative.

TURF

13th Annual National Institute set

The 13th Annual National Institute on Park and Grounds Management will be Nov. 7-10 at the Hyatt Hotel/ Conference Center in Birmingham, AL.

This year's Institute will feature sessions relating to park management with concurrent sessions relating to the management of campus and school areas and a program dealing exclusively with turf and sports turf areas. A representative from the National Park Service will present a session on parkway management. The Environmental Protection Agency will also be represented.

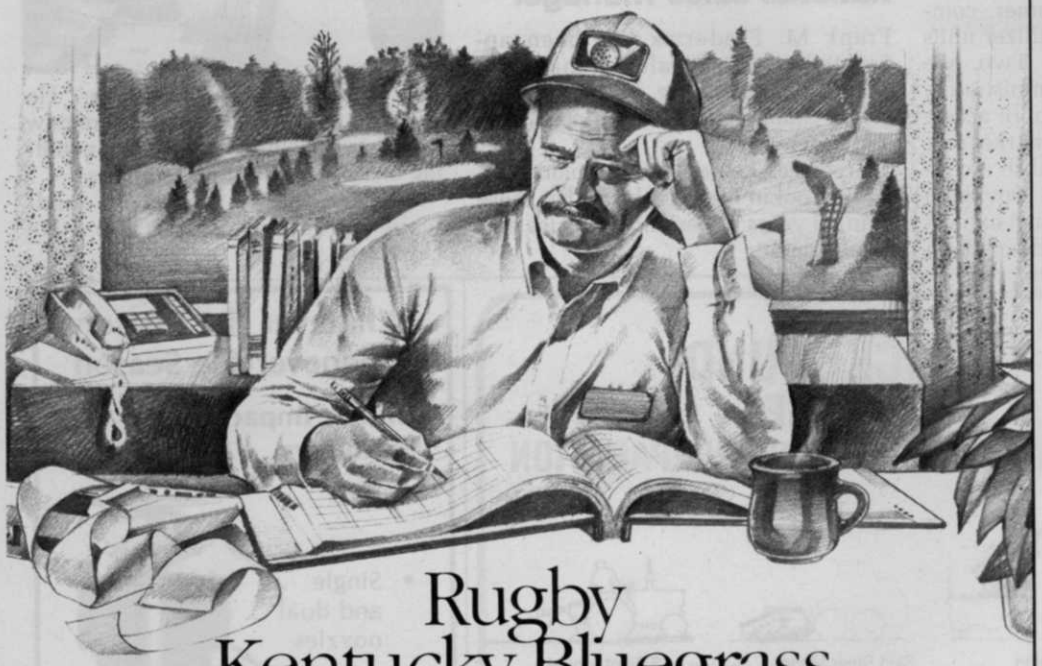
FERTILIZER

Estech reorganizes fertilizer division

Estech, Inc., a wholly-owned subsidiary of Esmark, has reorganized its Fertilizer Division and relocated it to

continued on page 16

KNOWING QUALITY TURF ISN'T ENOUGH. TODAY'S TURF MANAGER HAS TO MANAGE MONEY, TOO.



Rugby Kentucky Bluegrass grows rich on a lean budget.

Growing rich, green turf in today's economy is akin to being between a rock and a hard place.

Most Kentucky bluegrasses demand their fair share of nitrogen and water. But nitrogen and water, like the time needed to apply them, are money. And money is tight.

Fortunately, Rugby Kentucky Bluegrass is not like most bluegrasses. It's designed to get by on less.

In test plots grown in diverse climates from Manitoba to Oklahoma and California to Virginia, Rugby demonstrated superior tolerance to environmental stresses. Its most notable attribute, however, is its ability to thrive on *little or no nitrogen* and *moderate moisture.*

In addition to saving the costs of time and materials involved in watering and fertilizing, Rugby's environmental tolerance means extra vigor in resisting disease.

In overall tests, Rugby scored above 29 other Kentucky bluegrasses in resistance to *Fusarium blight,* and was second highest in resistance to leafspot. It has also shown good ability to avoid the perils of powdery mildew, dollar spot, and stem rust. And if there's anything that can chew your budget to bits, it's the unplanned purchase of fungicide for sick grass.

So the next time you're sitting down with the books, don't get lost in all the worry of red and black ink. Instead, think of the rich, green density of Rugby Kentucky Bluegrass. And how its low-maintenance features can help you out of a tight spot.

For more information, write: Rugby, P.O. Box 923, Minneapolis, Minnesota 55440.

Rugby
KENTUCKY BLUEGRASS
For low-maintenance turf

Circle No. 128 on Reader Inquiry Card

Fairview Heights, IL, a St. Louis suburb.

"This reorganization, which we expect to be completed by mid-August, is the result of a serious look at the fertilizer industry and the changing needs of our customers," said Edward R. Vrablik, president and chief executive officer. "Not only do we see an improvement in the general economy, but feel confident that a resurgence in the agricultural market is just around the bend."

Mark G. Boulanger has been appointed vice president, Branded Fertilizers and will head the Fertilizer Division. Prior to his new appointment, he was vice president, consumer and institutional products.

"We have three key objectives in our restructuring program," Boulanger explains. "One is to streamline the operation so that Estech's consumer, commercial and agriculture fertilizer units fall under one division. Two, we would like to make the administrative and operations personnel more accessible to one another and to market areas. Three, we want to establish a centralized marketing team that provides a blend of company and product experience with marketing expertise. From this team you can expect some innovative programs that will better fit the needs of our fertilizer customers."

Estech entered the fertilizer business over 100 years ago. Today it markets, through a nationwide network which includes more than 250 dealer or Estech-owned outlets, the consumer line under the Vigoro® brand, the commercial line under the Par Ex® brand and the agriculture line under the Certified Harvest King® brand. The Fairview Heights headquarters will consolidate the Atlanta, St. Louis and Chicago facilities for these lines.

INDUSTRY

Champion appoints national sales manager

Frank M. Frederick has been appointed national sales manager of Champion Brass Mfg. Co. of Los Angeles. Champion produces sprinklers and accessories.

Frederick comes to Champion from Royal Tool in New York and has more than 20 years experience in sales and management.

TREES

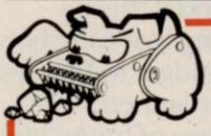
NAA appoints Williston director of safety and education

Richard M. Williston is the new Director of Safety and Education for the National Arborist Association.

Williston will administer the NAA's Home Study slide/cassette safety programs and seminars. He will also edit the NAA's monthly publication for

field personnel, "The Treeworker." He will formulate the development of new safety and training programs, including manuals and safety seminars.

Williston has a degree in landscape horticulture from Ohio State University.



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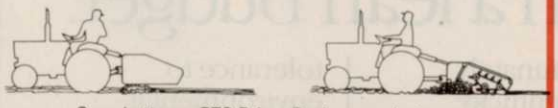

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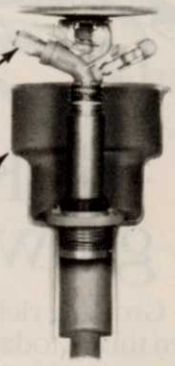

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LAWN CARE PROFESSIONALS...MARK YOUR CALENDARS!

THE PLACE: INDIANAPOLIS THE DATE: NOV. 8-10 THE EVENT: THE PROFESSIONAL LAWN CARE ASSOCIATION OF AMERICA 1983 CONFERENCE & TRADE SHOW

THE PROFESSIONAL LAWN CARE ASSOCIATION OF AMERICA CORDIALLY INVITES YOU TO THE 4TH ANNUAL CONFERENCE AND TRADE SHOW, NOVEMBER 8 TO 10, INDIANA CONVENTION · TRADE CENTER, INDIANAPOLIS, INDIANA.

The Lawn Care industry will gather in Indianapolis this November for three exciting days of growing, learning and enjoying at the 4th Annual PLCAA Conference and Trade Show.

CONFERENCE PROGRAM: Meet with leading experts and colleagues from across the country. Talk shop, share problems and solutions, and exchange ideas. The 1983 conference program includes some of the top pros in the turf industry. You'll get practical, no-nonsense advice on the hot topics: • What's new in agrinomics • Better business practices • Government regulations that affect your business • Effective management.

TRADE SHOW: Preview supplier products, equipment and services in the spectacular Indiana Convention · Trade Center. Major industry manufacturers and suppliers will be on hand to demonstrate their product and answer your questions.

KEYNOTE SPEAKER: The 1983 PLCAA Keynote Speaker will be the dynamic Jack Van Fossen, President and Chief Executive of Chemlawn Corporation. Meet the driving force behind Chemlawn, one of the remarkable success stories in the turf industry.

EARLY BIRD REGISTRATION: Make plans to arrive early Monday, November 7th, and take advantage of the Early Bird Registration and Reception Theme Party. Register, meet old friends, (and make some new ones), relax and be fresh and ready to go when the show opens Tuesday morning.

Symbol of Good Practice
PLCAA
PROFESSIONAL LAWN CARE ASSOCIATION OF AMERICA

YES! I'm interested in attending PLCAA's 4th Annual Conference and Trade Show. Send me more information on:

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Circle No. 125 on Reader Inquiry Card

LANDSCAPE LOG

By Douglas Chapman, horticulturist, Dow Gardens, Midland, Michigan

SEPTEMBER JOB FOCUS

1. **Lawns**
   - **a. renovation**
   - **b. insect control**
   - **c. fertilization**
   - **d. broadleaf weed control**
2. **Transplanting shrubs**
   - **a. balled and burlapped (B. and B.)**
   - **b. container-grown**
   - **c. broadleaf evergreens**

September is a pivotal month. Certainly, we are well into "fall landscaping." This fall activity for the lawn includes renovation, insect control, fertilization, and broad leaf weed control. Further, it includes transplanting of shrubs, specifically B. and B., container grown, and broadleaf evergreens.

LAWNS

Early September in the north and the entire month throughout central Ohio remains the prime time for either new lawn installation or renovation. The air temperature is cool and the soil is warm with photoperiod favoring new grass seed germination, but the aforementioned climatic conditions discourage new weed establishment. In general, by September the weed season is over and cool season grass growth is at its peak. Latitude will dictate how late one can consider new seeding of areas. Generally speaking, for central Michigan, seeding should be completed by the second week of September or consider late dormant seeding. Grass germination is usually rapid, depending upon the type (5-15 days) with a weed-free turf. Each part of the country should contact its land grant college for the correct seed type, but it should be stressed, for most commercial areas and home grounds, that a mixture of bluegrass, fescue, and perennial ryegrass (hardy) is probably the best to result in a high quality-minimum maintenance turf.

If your landscape is in an area where Asiatic Garden Beetle, Japanese Beetle, or any of the June beetles are a problem, then control in September is important. Although there are several compounds that are effective, Dursban, Diazinon, and Turcam are among the most highly recommended by the Cooperative Extension Service. Again, one should check with the local Cooperative Extension Service for individual state recommendations and clearance. Generally speaking, it is easier, safer, and still an effective way to apply granular herbicides, contrasted to spraying, if not an experienced applicator. It has frequently been suggested they cost a little more but the cost benefit ratio certainly favors the use of these granular materials when inexperienced and when one infrequently applies pesticides.

FERTILIZATION

Fertilizing should certainly be high on the list. With the return of rain and cool air temperatures, bluegrass and fescue again become quite active. This activity should be supported with adequate fertilization. Current research is suggesting the application of 1 pound of actual nitrogen per 1000 square feet with a 3-1-2 ratio gaining more and more acceptance. In other words, it is important to stimulate the turf with nitrogen while potassium encourages carbohydrate storage, thus winter and drought hardiness.

Broadleaf weed control is generally effective spring or fall. Most materials used to control broadleaf weeds include a combination of hormone type herbicides or a mixture of 2,4-D and MCPP or Dicamba. These combinations of materials are extremely effective in controlling most or all broadleaf types while having little or no effect on turf. Garlon is an established herbicide for industrial weed and brush control and is showing exciting potential for use in combination with 2,4-D for broadleaf weed control in turf. This potential is in the wide range of broadleaf weeds that can be controlled. Controlling broadleaf weeds in the fall in central Michigan has been extremely effective. With the cool season grasses again growing actively, they often fill in where the undesirable plant was, before the onset of another weed season in June. Further, many worthy trees and shrubs are not growing actively, thus are less sensitive to volatilization. It should be noted that the safest formulations are amine salts, L.V. esters, or granular formulations. Further note that if one is applying granular formulations, it should be applied to set turf areas and not watered in for at least 24 hours.

If there is such a thing as step-wise procedure, the turf areas should be fertilized, mowed, and the broadleaf herbicide applied with 1 to 2 days between each step.

TRANSPLANTING SHRUBS

Container grown trees and shrubs, B. and B. shrubs, and ericaceous plants can be transplanted before leaf drop, or dormancy. In fact, it is a good opportunity to get an early start on replacement or initial installation. With the warm soil and cool air temperatures, root establishment can be quite extensive prior to the onset of winter. It should be noted, at this point, that we have suggested container grown deciduous trees, not B. and B. trees as the transplant shock prior to leaf drop can be extensive. Ericaceous, or broadleaf evergreens, because of their extensive shallow yet dense fibrous root system, are effectively transplanted in September and October. One thing to consider in stimulating lateral root development on ericaceous plants and many container grown trees and shrubs is root slicing. This shallow slicing with a knife into the root system stimulates lateral root development and hastens landscape establishment. If soil amendments are used frequently, they will encourage early development. In this case, we would suggest composted animal manures, peat moss, leaf mold, or COMPOSTED BARK. The addition of organic matter speeds up establishment, conserves moisture, and provides an excellent environment for any plant establishment.

September—the transition month through fall when planting can again be considered and turf establishment and care are paramount.

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Circle No. 105 on Reader Inquiry Card

Overseeding

Healthy bermudagrass is key to successful wintergrass/summergrass transition

By Howard E. Kaerwer

Contrary to general thinking, preparation for transition from wintergrass (on southern golf greens) should begin during early summer.

Healthy bermudagrass is the key ingredient. Prepare for transition next spring by early correction of compaction problems, balancing fertility demands, and keeping thatch under control. Correct shade and drainage problems that weaken the bermudagrass. Get rid of weeds but be careful not to overdose the greens with chemicals.

DIAGNOSING

For 17 years, I have been observing Southern golf greens while developing and evaluating our Medalist overseeding formulas. Those with healthy bermudagrass have had the least problems transitioning back in the spring. These greens, in addition to a thick, green bermudagrass playing surface, will have grass with dense and deep roots plus large and numerous rhizomes. It is surprising to see how green construction and management influence the development of bermudagrass rhizomes and roots and thereby the health and quality of greens. Much of the diagnosis for correcting deficiencies can be spotted by looking below ground. Early detection is important. Little can be done to improve the situation just before the fall seeding date. No time for the bermudagrass to recover before dormancy.

Howard E. Kaerwer is research director for Northrup King & Co., Eden Prairie, MN

While two-thirds of the battle will be won through healthy bermudagrass, the overseeded grasses' needs cannot be forgotten. Remember, phosphorous, potassium, and micronutrients balance is a requirement. Adequate nitrogen to maintain growth, if not color, is also a requirement. However, too much residual nitrogen in the soil when spring temperatures warm can cause an excess of ryegrass growth. This causes excessive shading of the soil which in turn keeps soil temperatures lower to slow bermudagrass recovery from dormancy.

It is often stated that the overseeded grasses stay around too long in the spring. Yet many other superintendents report that they are happy to have a good putting surface for the golfers during the busy spring months, regardless of the kind of grass. It is good insurance for them. They report few golfers notice the grass they are playing on as long as the surface holds the ball, putts well, and is green. I have yet to hear adverse comments about a good putting surface. However, a green bare of grass turns golfers off in a hurry.

ORDERLY TRANSITION

Prior to 1969, when we first introduced fine textured perennial ryegrass to the overseeding market, annual ryegrass or mixtures usually including Poa trivialis were the basic overseeding grasses. Often overly fast transition caused disasters for superintendents and turned golfers to other courses. The ability to maintain grass for a gradual transition was a major reason for the initial success of our Medalist II formula that year. The winter and spring of 1969-70 was a tough one and those superintendents who had switched to the then new turf-type perennial ryegrass formula had "grass" when neighboring courses were bare. The next year the demand for Medalist far exceeded the supplies and superintendents gladly began managing their spring transition. Later a trend developed to let nature take its course and let transition happen without the superintendent's help. Complaints began to be raised usually by superintendents following the unmanaged transition procedure about the ryegrass staying around too long. Yet those superintendents who continued to take the necessary steps to provide an orderly transition have usually reported good success.

Following the tough winter of 1981-82 many superintendents reported bermudagrass injury and kill. A controversy arose concerning cause. Some said the ryegrass killed the bermuda while others stated they were happy to maintain their wintergrass because their bermudagrass had winter killed.

I have been making trips across the south during March for 17 years. Inspection of bermudagrass roots and rhizomes is a standard practice for me at this time of the year. Those years when we find dead, small or off-white rhizomes are followed by poor spring transi-

continued on page 26

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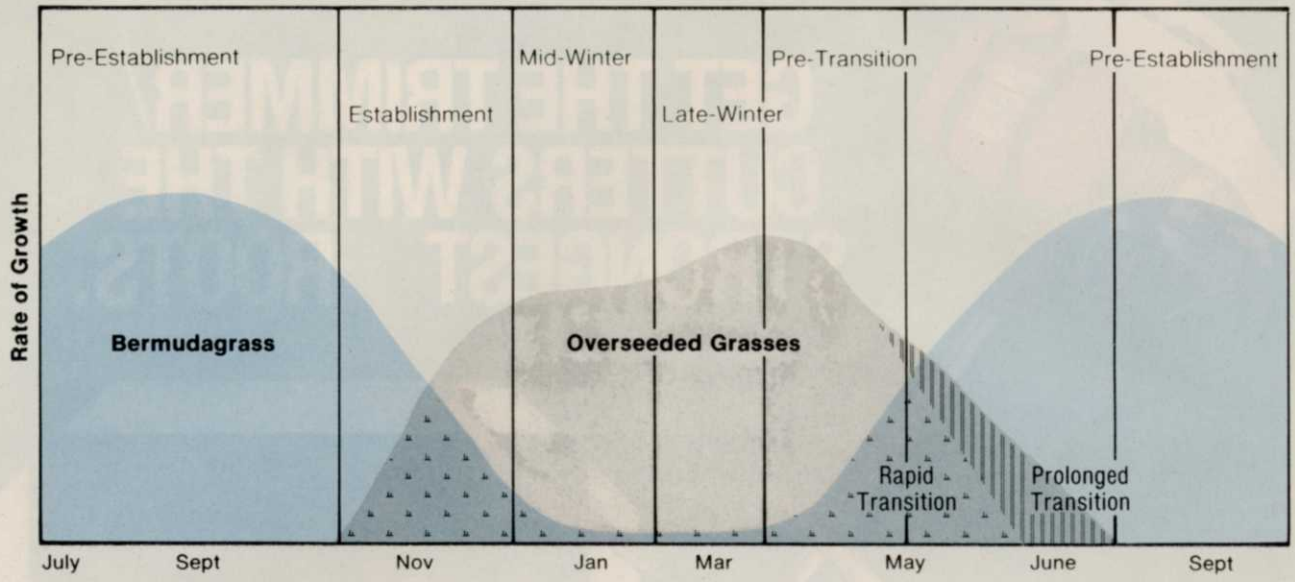


Diagram shows growth rate of Bermuda and cool season grasses, including the approximate time of transition. (Chart does not apply to southern Florida).

tion! Everyone should observe the bermudagrass below ground before it starts spring growth. Then a logical decision can be made concerning the timing of transition or the need to hold the wintergrass while the bermudagrass recovers.

What are some of the causes of poor transition? I believe soil compaction has a major effect along with cold temperatures. Soil saturation with attendent freezing and thawing is disasterous to the bermudagrass roots, rhizomes and crowns. Of course fertility imbalance, diseases, insects, and nematodes take their toll. (Again much could have been done during the previous summer to control these problems.) Management practices need to be adjusted to recognize the needs of both wintergrass and bermudagrass as well as golfing requirements. Will a tournament require early or late transition?

The decision to transition needs to be made well ahead of time to allow for the necessary management procedures. Climatic conditions may then cause some adjustments but at least the process is under way. Take advantage of the growth characteristics of the "cool season" grasses (ryegrass, fine fescue, bentgrass, bluegrass, and Poa trivialis) and the warm season grass (bermudagrass) to aid your transition management.

Consider how bermudagrass differs from the cool season grasses.

We all recognize that bermudagrass likes hot weather, goes dormant when temperatures cool, and renews growth when soils warm. The cool season grasses perfer cool temperature and are stressed when soils heat into the 80's°. When this condition develops, the root system deteriorates and excess top growth develops. Carbohydrate fixation is reduced and respiration increases causing the grass to weaken. It becomes more susceptible to drought stress, diseases, wear, and bermudagrass crowding, all of which cause thinning of the cool season grass.

Once the bermudagrass had poked through the soil, it is benefited by high nitrogen applications. On the other hand, excess nitrogen will cause ryegrass and the other cool season grasses to become overly succulant causing stand thinning.

Mowing practices, too, can be used to advantage in controlling transition. A relatively tall cut in the spring will aid wintergrass to maintain deep and vigorous root systems. Short mowing reduces the capacity of the plant to fix carbohydrates and cause root dieback. Short mowing at this time aids the bermudagrass. Less shading by the wintergrass helps sunlight penetration to the soil and increases the soil temperature causing faster bermudagrass recovery.

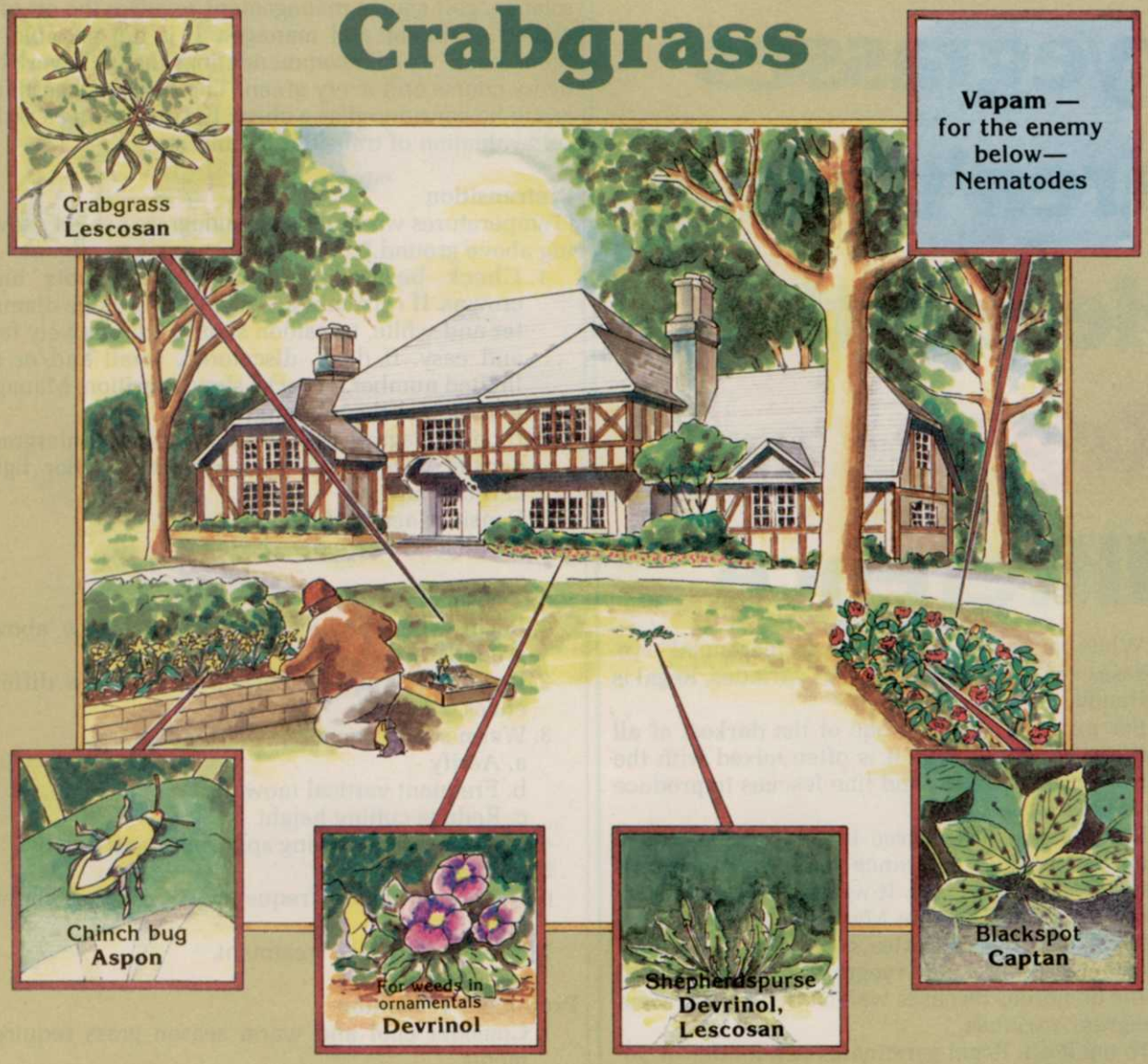
While the superintendent has only partial control of water availability, he can use irrigation practices to control transition. Perennial ryegrass and the other wintergrasses like adequate moisture within their root zone. Moist soil is also cooler and evapotranspiration cools the grass plants thereby keeping them healthier and more persistant. Bermudagrass also requires water. However, its root system usually is below that of the stressed ryegrass. Deeper and less frequent irrigation benefits the bermudagrass and helps it replace the wintergrass.

Here is one instance where diseases can come to the superintendent's aid. Weakened ryegrass is usually more susceptible to diseases. These help to further weaken the grass and cause it to thin. Bermudagrass, which has gone into and came through the winter in a healthy condition, usually is not subject to serious spring disease problems. To maintain an overseeded stand, use fungicides and other practices that keep the wintergrass healthy until transition is desired.

No two golf courses are the same and no two greens are identical in their performance. It is a tribute to the skill of golf course superintendents who interpret their

continued on page 28

LESCOSAN* Controls Crabgrass



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REGAL

Turf-type Perennial Ryegrass

Circle No. 111 on Reader Inquiry Card

OVERSEEDING *from page 26*

courses to the benefit of the golfers and owners in an economical, yet prudent manner. While based on science, golf course management requires the art of a skilled evaluator and manager. It is not possible to "cook book" exact recommendations that will work on every course and every green. The below suggestions are to be considered as a check list for making a skillful evaluation of transition requirements.

Pretransition

(Temperatures warming. Bermudagrass not yet showing above ground.)

1. Check bermudagrass rhizomes, roots and crowns. If rhizomes are plentiful, or large diameter and white, transition should be relatively fast and easy. If dead, discolored, small and/or of limited number, expect a slow transition. Manage to maintain the wintergrass.
2. If bermudagrass O.K. begin to reduce wintergrass density. Use combs/split rollers. Regular light vertical mowing.
3. Consider aerification.
4. Fertilize as needed.

Rapid Transition

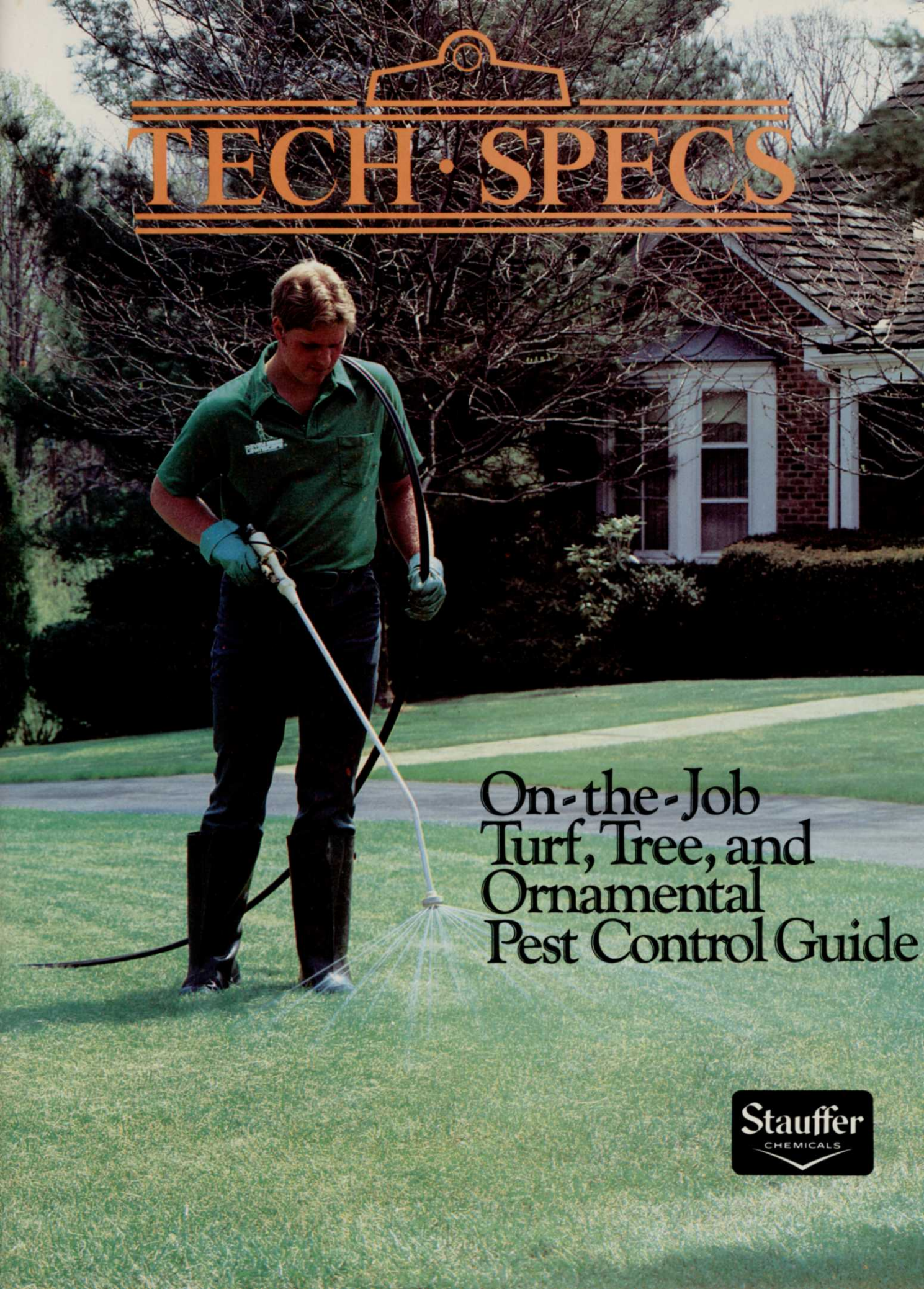
1. Begin when bermudagrass shoots show above ground.
2. Remember warm and cool season grass differences.
3. Warm soil to encourage bermudagrass.
   a. Aerify
   b. Frequent vertical mowing.
   c. Reduce cutting height.
4. Mow frequently using split roller and combs.
5. Increase nitrogen.
6. Reduce irrigation frequency. Stress the wintergrass.
7. Reduce fungicide treatment.

Prolonged Transition

1. Consider cool and warm season grass requirements.
2. Keep a dense wintergrass canopy.
   a. Do not aerify.
   b. Restrict vertical mowing.
3. Maintain height of cut.
4. Use split rollers and combs.
5. Hold down nitrogen. Use iron for color.
6. Prevent moisture stress. Irrigate and syringe.
7. Use preventitive disease practices.

Transition of greens on the superintendent's terms is possible and practical. At the same time we must recognize we are working with very complex environmental and soil interactions involving two entirely different types of grass. For these reasons, transition from one grass to the other is not always easy and exact "cook book" practices won't give results with utmost certainty. Knowledge of the grasses growth habits help.

Regardless of the grass, a good putting surface meets golfing requirements. Thinking healthy bermudagrass as well as wintergrass year-around can provide the key to success. **WTT**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CHEMICALS

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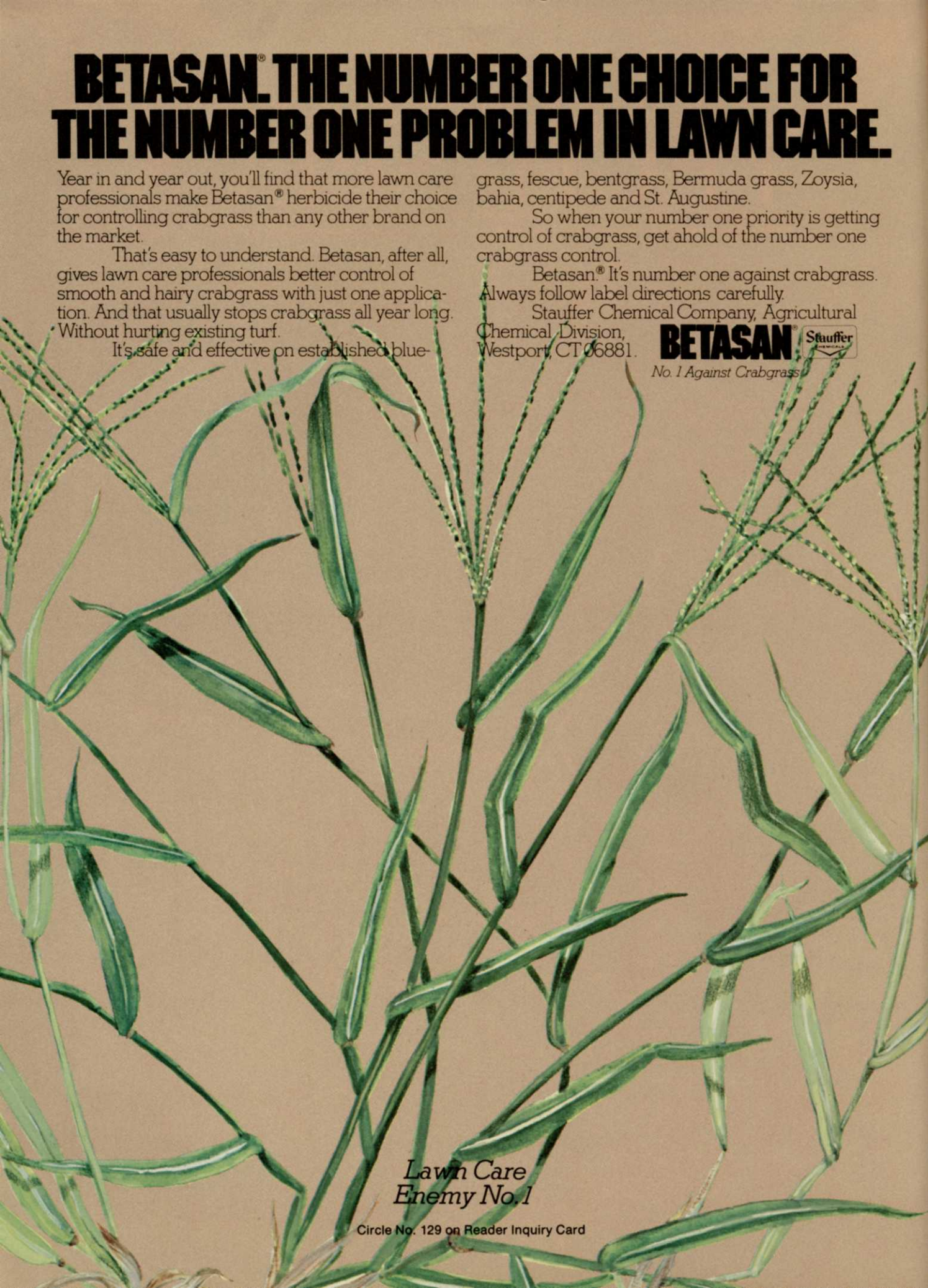
Betasan.® It's number one against crabgrass. Always follow label directions carefully.

Stauffer Chemical Company, Agricultural Chemical Division, Westport, CT 06881.

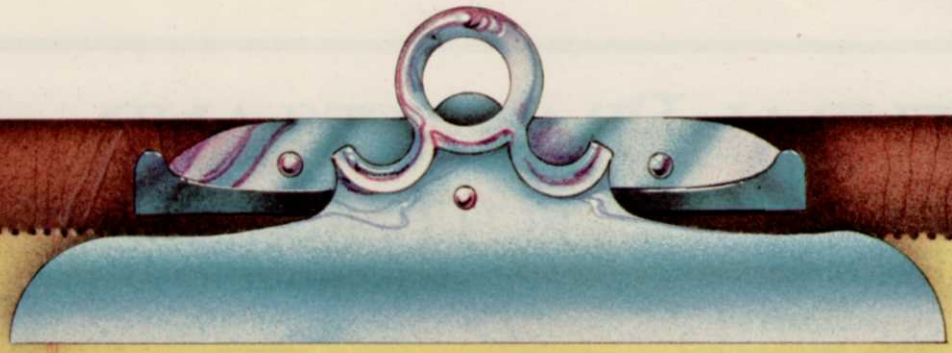
BETASAN® Stauffer

No. 1 Against Crabgrass



Lawn Care Enemy No. 1

Circle No. 129 on Reader Inquiry Card



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Herb Day

Herb Day,
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Westport, CT 06881
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Cultural Practices and Herbicide Effectiveness

Euel Coats
Mississippi State University,
Mississippi State, Mississippi

Turf management practices prior to and following herbicide applications can influence control. Practices which encourage a healthy, vigorous turf are a critical part of a weed control program. However, a few temporary adjustments in a turf management schedule can increase the effectiveness of herbicides during application.

1. Mowing should be avoided three days prior to application of postemergence herbicides, as well as three to five days after application. Most postemergence herbicides work through the foliage. Insufficient surface exposure of the weed to the herbicide can result in poor control. Also, if the turf foliage is removed before the herbicide has time to enter the weed's system, control is also reduced.

Preemergence herbicides act through the soil, so mowing should not affect control.

Mow frequently to the recommended height. Under most conditions mow as high as your clientele will tolerate. Try not to mow more than one third of the height of the turf at one time. Keep mower blades sharp for a neat, clean cut without tearing or pulling the turfgrass plant.

2. Cultivation and Aerification should be done before applying preemergence herbicides to control weed seed brought to the surface in the process. Do not aerify following the preemergence application. Once soil is disturbed by aerification, the effectiveness of the preemergence is reduced.

3. Withhold Irrigation for two days after applying postemergence herbicides. Irrigation following preemergence herbicide or soil insecticide applications, however, is often recommended to "water in" the herbicide into the thatch and soil.

Normally irrigation should be deep and infrequent to encourage deep rooting. Excess moisture can lead to turf disease, shallow root systems, *Poa annua*, and algae.

4. Test Soil for minerals, pH, and bulk density. Pesticide and fertilizer effectiveness and turfgrass vigor can be reduced by poor soil. Without correction, time and money are wasted. Contact the local Extension Agent for recommended soil conditions for your area and for testing facilities. Periodically check the pH of tank mixes since the effectiveness of certain pesticides depends upon pH. Guard against compaction by traffic control or frequent aerification.

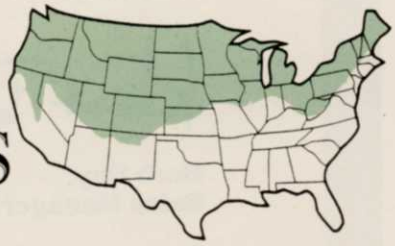
5. Apply Proper Fertilizers, but do not overfertilize. Maintain a dense turf but avoid thatch buildup with lush turf growth. Soil tests will tell you if you really need a complete fertilizer each time.

6. Control Insects and Diseases to prevent weed invasion.

7. Select Competitive Turfgrass Varieties. In the Sunbelt, Tifway for fairways and Tifgreen (328) for greens would be ideal for bermudagrass. Dwarf bermudagrasses do not afford the same competition to weeds. Tall turf-type fescues and zoysia are aggressive for the transition zone. Kentucky bluegrasses vary in aggressiveness for the North. Select one that is aggressive to prevent weed competition.

8. Control Weeds. Choose herbicides which are recommended and safe to use on your type of turfgrass. Be careful to apply them at the rates and in the manner specified on the label.

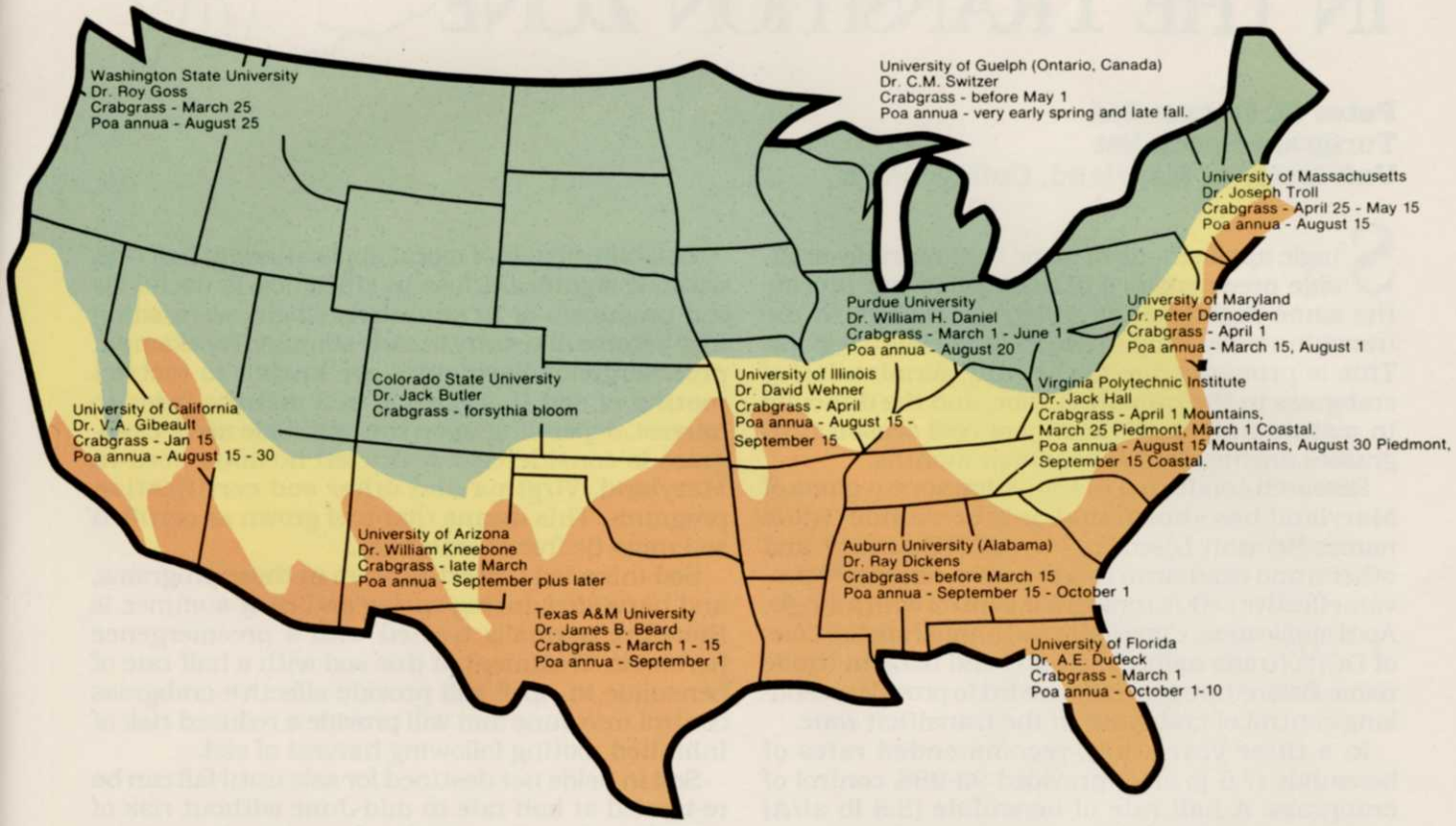
Timing Preemergents in Cool Season Grasses



T.L. Watschke
Pennsylvania State University,
University Park, PA

It has long been recognized that effective control of summer annual grassy weeds can best be accomplished by using preemergence herbicides. Proper application procedures and timing insure excellent control of a number of species (foxtails, smooth crabgrass, goosegrass, barnyardgrass) from several herbicide choices. However, many variables exist that can affect control; grass vigor, species, maturity, soil physical conditions, weather, and infestation level.

Suggested Timing for Preemergence Herbicides To Control Crabgrass and Annual Bluegrass


Washington State University
Dr. Roy Goss
Crabgrass - March 25
Poa annua - August 25
University of Guelph (Ontario, Canada)
Dr. C.M. Switzer
Crabgrass - before May 1
Poa annua - very early spring and late fall.
University of Massachusetts
Dr. Joseph Troll
Crabgrass - April 25 - May 15
Poa annua - August 15
Purdue University
Dr. William H. Daniel
Crabgrass - March 1 - June 1
Poa annua - August 20
University of Maryland
Dr. Peter Dernoeden
Crabgrass - April 1
Poa annua - March 15, August 1
Colorado State University
Dr. Jack Butler
Crabgrass - forsythia bloom
University of Illinois
Dr. David Wehner
Crabgrass - April
Poa annua - August 15 - September 15
Virginia Polytechnic Institute
Dr. Jack Hall
Crabgrass - April 1 Mountains, March 25 Piedmont, March 1 Coastal.
Poa annua - August 15 Mountains, August 30 Piedmont, September 15 Coastal.
University of California
Dr. V.A. Gibeault
Crabgrass - Jan 15
Poa annua - August 15 - 30
University of Arizona
Dr. William Kneebone
Crabgrass - late March
Poa annua - September plus later
Auburn University (Alabama)
Dr. Ray Dickens
Crabgrass - before March 15
Poa annua - September 15 - October 1
Texas A&M University
Dr. James B. Beard
Crabgrass - March 1 - 15
Poa annua - September 1
University of Florida
Dr. A.E. Dudeck
Crabgrass - March 1
Poa annua - October 1-10

Application Timing

The most important aspect of successful preemergence control is correct timing of herbicide application. The chemical, such as Betasan®, must be present during the germination process to be effective. Therefore, application must be made seven to ten days prior to expected germination.

Regardless of the formulation used, rainfall is needed after application to disperse the active ingredient into the upper portion of the soil-thatch complex. If rainfall does not occur between application and germination, control may be substantially reduced. In some cases, irrigation may be required if rainfall does not follow within a few days of herbicide application.

Choosing an application date that is seven to ten days prior to germination should be based upon local experience. (See map for timing). Many use the biological index of petal drop of forsythia. While petal drop is usually indicative of approximately the correct timing, weather peculiarities during any given Spring may cause blossoms to be retained abnormally long or fall prematurely.

In situations where smooth crabgrass is expected to germinate over a three month period, application of materials labeled for repeat applications should be made seven to eight weeks after the initial treatment. Repeat applications are unnecesary with Betasan.

If goosegrass is the target species, application of preemergence herbicides labeled for goosegrass control should be made approximately three weeks following the timing cited above for smooth crabgrass.

If annual bluegrass is the target species, preemergence applications should be made in mid-August for Pennsylvania. Check map above for timing in other areas. Annual bluegrass is a winter annual rather than a summer annual. Germination is predominately in the fall.

Combinations of fertilizer and preemergence materials in the liquid form are a common practice in professional lawn care. Soluble nitrogen sources can alter the solution pH and precautions should be taken to insure that the fertilizer-herbicide combination is compatible prior to preparation of large quantities. The activity of the herbicide may be affected through chemical alteration and/or precipitation in the tank.

Crabgrass Control in the Transition Zone

Peter H. Dernoeden
Turfgrass Specialist
University of Maryland, College Park

Single applications of some commercially available preemergence herbicides do not provide the same high level of crabgrass control in the transition zone, compared to more northern regions. This is primarily due to the early germination of crabgrass in the transition zone, and the difficulty in maintaining good density of cool season turfgrasses during stressful summer months.

Research conducted in transition zone regions of Maryland has shown that only bensulide (trade names-Betasan, Lescosan, Pre-SAN®, Betamec®, and others) and oxadiazon (trade names-Ronstar®) provide effective (>90%) crabgrass control with a single, April application. Conversely, two annual applications of DCPA (trade name-Dacthal®) and benefin (trade name-Balan®) are generally needed to provide season-long control of crabgrass in the transition zone.

In a three year study, recommended rates of bensulide (7.6 lb ai/A) provided 93-98% control of crabgrass. A half rate of bensulide (3.8 lb ai/A) applied in early April and repeated in mid-June gave 90-95%.

Flexibility in use of repeat applications at half rate, without significant loss in efficiency, is useful for sod producers or in situations where overseeding may become necessary in early summer. For example, preemergence herbicides are known to restrict rooting of sod if applied 1 to 3 months prior to harvest, depending upon the herbicide used. Crabgrass is considered a restricted noxious weed in Maryland, Virginia and other sod certification programs. This means that turf grown as certified sod must be free of crabgrass.

Sod intended for certification in these programs, and harvested during spring and early summer, is therefore normally treated with a preemergence herbicide. Treatment of this sod with a half rate of bensulide in April will provide effective crabgrass control into June and will provide a reduced risk of inhibited rooting following harvest of sod.

Sod in fields not destined for sale until fall can be re-treated at half rate in mid-June without risk of significant crabgrass development during the remainder of the season. To be effective, however, it

One application of bensulide in April provides season-long control of crabgrass in the transition zone.

is suggested that bensulide be irrigated-in or applied within 24 to 72 hours of rain.

Bensulide applied in combination with napropamide (trade name-Devrinol®) or oxadiazon also effectively controls crabgrass. Registration of napropamide is expected soon. A bensulide-oxadiazon combination is available for use on turf. Currently, this product is labeled for use on bermudagrass, perennial ryegrass and Kentucky bluegrass.

Bensulide can discolor *Poa annua*, but **is safe to use on all turfgrasses,** and should only be applied to established turfs. Benefin, DCPA and oxadiazon are not recommended for use on fine-leaf fescues (*Festuca rubra* and others), or bentgrasses (*Agrostis* sp.). While most preemergence herbicides are safe to use on warm season grasses (i.e. bermudagrass and zoysiagrass), oxadiazon is not recommended for use on zoysiagrass.

Only siduron (trade name-Tupersan®) may be applied in the seedbed at the time of seeding, or on seedling turf. Siduron is injurious to bermudagrass, particularly newly sprigged areas. Siduron has a short residual and does not provide effective, season-long control of crabgrass in the transition zone.

TIMING PREEMERGENTS IN WARM-SEASON GRASSES

B.J. Johnson
Professor of Agronomy
University of Georgia
Experiment, Georgia 30212

Control of weeds in warm-season turf is a year-long process. Turf managers must develop weed control programs for both summer and winter.

Summer Weed Control

The germination of crabgrass and goosegrass depends on soil temperature and other environmental conditions. In the Piedmont region of Georgia, crabgrass generally germinates by mid-March and goosegrass germinates by mid-April. Studies conducted just south of Atlanta at the Georgia Experiment Station resulted in optimum crabgrass control by Betasan when applied March 15. Crabgrass control was reduced slightly when Betasan was applied early in February and drastically reduced when treatments were delayed until April or May. The poor control from late treatments occurred because weeds had germinated and emerged before chemical applications were made. When Betasan was applied to the same area for two or more years, crabgrass control was effective when full rates were applied the initial year and followed by one-half rates the following year.

When crabgrass has already germinated, tank mixtures of MSMA with preemergence herbicides such as Betasan will improve weed control. The MSMA controlled emerged weeds while preemergence treatment prevented reinfestation from late germinating weed seed. It is important not to apply the combination treatments to St. Augustine, Centipede, or other grasses not tolerant to MSMA treatments.

Registration of Devrinol for turf is expected this fall. Devrinol applied in March controlled crabgrass and goosegrass in both granular and wettable powder formulations. Single March treatment with granular Devrinol controlled a higher percentage of goosegrass than a single March application of the wettable powder. However, a second wettable powder treatment in May resulted in excellent goosegrass control.

The new turf label for Devrinol recommends an application of Betasan in sequence with Devrinol for maximum control of both crabgrass and goosegrass.

Winter Weed Control

Since mild winters occur where warm-season grasses are grown, winter weeds are a continuous problem. Weed identification is important before selecting a preemergence herbicide because a single herbicide will not control all weed species. For example, Betasan was the only chemical that controlled parsley-piert in a study conducted in the Piedmont region of Georgia. However, the treatment must be applied in September or October to obtain effective control. In all instances herbicides applied in September or October controlled a higher percentage of winter weeds than when treatments were applied in July or August. The poor weed control from July and August treatments was related to high temperatures at time of treatment. It should be emphasized that when warm-season grasses are overseeded with cool-season grasses in the fall, preemergence treatments must be applied at least 60 days before planting.

Sod Webworm and Chinchbug Control

Harry D. Niemczyk
Professor of Turfgrass Entomology,
OARDC - The Ohio State University,
Wooster, Ohio 44691

Sod webworms and chinchbugs are two thatch-inhabiting insect pests capable of inflicting visible damage to turfgrasses. Control of these pests is readily achieved by timely detection and treatment with effective insecticides.

SOD WEBWORMS

The term sod webworm includes a variety of species. The extent of injury from this group of pests varies with the species and location of occurrence.

Sod webworm adults are the small, grayish-white to beige moths with a wingspread of ¾-inch frequently seen flying over lawns at dusk or just after dark. The moths do not damage turf.

Sod webworm larvae are caterpillars varying in color from greenish to beige, brown or gray, depending upon the species. When mature, they are ¾-inch long and most have characteristic dark circular spots scattered over the body length. As the larvae mature, they construct tunnels or burrows through the thatch, sometimes extending into the soil.

Feeding and consequent damage occurs at night. If feeding is extensive during dry weather, the plants may be killed.

Life Cycle. Female moths drop their eggs on the turf as they fly over the turf at dusk. Eggs hatch in a week to 10 days. About six weeks are required for development from egg to adult. The most common species on northern turfgrass, the bluegrass webworm and large sod webworm, have two generations each year and overwinter as larvae in silken webs

Detection of Insects in Turf

Pyrethrins and water sprinkled over turf will bring webworm larvae to the surface.

Flooding an area of turf inside a coffee can results in reliable chinchbug counts.

Sod Webworm. Flocks of birds (particularly starlings) that frequently return to a turf area usually mean that sod webworms or other larvae are present. Further evidence of bird activity is probe holes left by the birds searching for larvae. Close examination of the turf in such areas either reveals larvae, or the green pellets of excrement (frass) left by them.

An effective method of detection is to mix one tablespoon of 1 to 2% pyrethrins (a common garden insecticide) in one gallon of water and apply the solution uniformly over one square yard of turf. The solution irritates the larvae which soon come to the surface. This is for detection only, not control.

Chinchbug. Infestations of chinchbug are often masked by the general droughty appearance of turfgrass when under moisture stress. If adults are present, they are often seen wandering across sidewalks or driveways on warm afternoons. Close examination of the turfgrass, particularly thatch, usually exposes the insects.

Another effective method of detection is to remove both ends of an empty coffee can, cut the rim off one end to produce a sharp edge and push the can two or three inches into the soil in an area where chinchbugs are suspected. Fill the can with water and wait a few minutes. If chinchbugs are present, they will float to the surface. The tiny red nymphs may be difficult to see, especially for those color blind to red.

BETASAN.® THE NUMBER ONE ANSWER TO YOUR NUMBER ONE PROBLEM ALSO CONTROLS EIGHT OTHERS.

It's no secret that Betasan® is the best pre-emergence herbicide in the business for knocking out crabgrass before it starts. In test after test, Betasan has proven best. Year after year. Little wonder more turf care professionals choose it over any other brand.

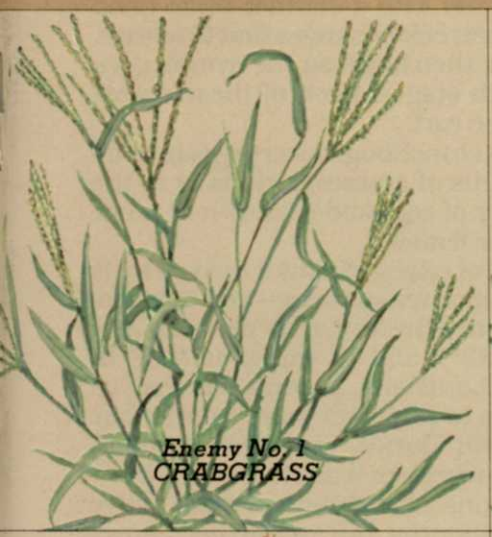
But crabgrass isn't the only tough weed Betasan can eliminate from your course. If you use Betasan at a lesser rate, you can safely make multiple applications* and achieve near-perfect control of all the pest weeds and grasses shown here. Especially goosegrass and poa annua.

Betasan is safe and effective on established bluegrass, fescue, bentgrass, perennial rye, Bermuda grass, Zoysia, bahia, centipede, St. Augustine and dichondra.

So to eliminate all these golf course enemies before you —or your members— ever see them, ask for Betasan. Always follow label directions carefully. Stauffer Chemical Company, Agricultural Chemical Division, Westport, CT 06881.

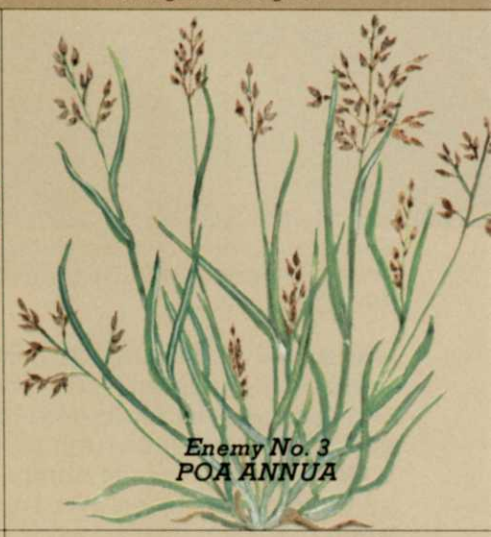
BETASAN® Stauffer CHEMICALS

No. 1 Against Crabgrass



Enemy No. 1
CRABGRASS

Enemy No. 2
GOOSEGRASS



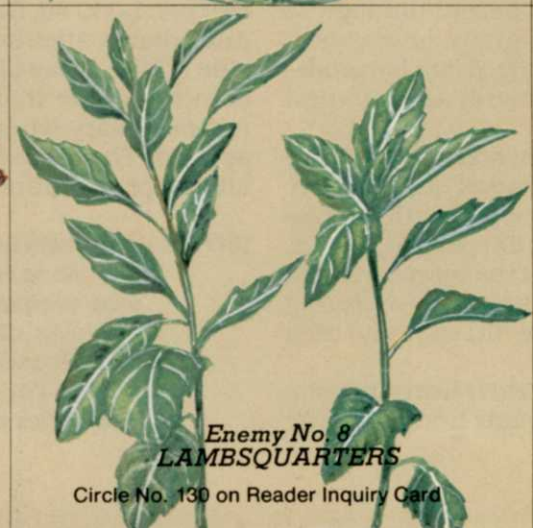
Enemy No. 3
POA ANNUA

Enemy No. 4
BARNYARDGRASS

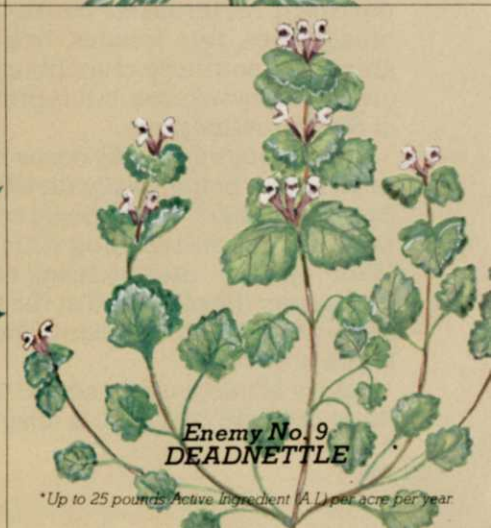
Enemy No. 5
FOXTAIL

Enemy No. 6
REDROOT PIGWEED

Enemy No. 7
SHEPHERDSPURSE



Enemy No. 8
LAMBSQUARTERS



Enemy No. 9
DEADNETTLE

Circle No. 130 on Reader Inquiry Card

*Up to 25 pounds Active Ingredient (A.I.) per acre per year.

Successful control of insect damage is evident in treated areas of this lawn. Untreated areas are damaged.

within the thatch. In southern climates, species such as the tropical sod webworm have several overlapping generations each year. In south Florida, generations continue through the year.

Control. When large numbers of sod webworm moths are seen flying over turf just after dark or when many are flushed while mowing, an infestation of larvae may be expected. Insecticide, such as Aspon®, applied two weeks after the moth population has decreased to a scattered few is effective in preventing damage. The two-week delay allows time for the eggs deposited by the moths to hatch into larvae that are then killed by the insecticide.

Insecticide may also be applied anytime a larval infestation is detected. Maximum effectiveness is obtained when the turf is thoroughly irrigated just before treatment. Irrigation *should not* be applied following liquid applications, but the turf *should be* irrigated as soon as possible after the application of granular insecticide.

CHINCHBUGS

Two species of chinchbugs are considered important pests of turf. The hairy chinchbug, a pest of northern turfgrasses, causes severe damage to bluegrasses, fine fescues, bentgrass, and zoysiagrass. The southern chinchbug feeds on bermudagrass and zoysiagrass, but is primarily a serious pest of St. Augustinegrass.

Chinchbugs generally occur in scattered patches rather than being evenly distributed over the turf. Sunny areas are most heavily infested with populations sometimes reaching 200-300 per square foot. Plant injury occurs as a result of the insect sucking fluids from the plant and at the same time injecting salivary fluids into the plant. The turf wilts and then turns brown.

Injury is particularly severe when heavy infestations occur in turf that is dormant from moisture stress. Such dry conditions are particularly conducive to chinchbug growth and population development.

Adult chinchbugs are 1/5 inch long, black with white wings folded over the back. The wings of some extend to the tip of the abdomen, but others extend only halfway to the tip. The nymphs (immature stages) range from 1/20 inch long, soon after hatching, to nearly the size of an adult. Upon hatching, nymphs are bright red with a distinct white band on the abdomen. Their color changes first to orange, then orange-brown, then black as the nymph goes through five growth stages. Each of these stages inflicts injury on the turf.

Life Cycle. Adult chinchbugs insert eggs in or on the lower leaf sheaths of grasses, stolons or in the thatch. The number of eggs laid is known to range from 233 to 289 per female.

The development of eggs and stages there-after is directly dependent upon temperature—and therefore location—in the United States. One generation may take six weeks at 83°F and 17 weeks at 70°F. In south Florida and Louisiana, generations may be continuous with up to seven per year; three to four generations in north Florida; two generations in Ohio; and one in an area such as Rochester, N.Y.

In southern regions, chinchbugs remain active during the winter months, but in northern areas they become inactive and go into a resting state. In Ohio, these adults become active again in March and early April, laying eggs in May that develop into damaging populations in July and August. They produce another generation in September which develops into adults that overwinter in the turf or nearby sheltered areas.

While some adult chinchbugs are capable of flight, crawling is their usual means of mobility.

Control. Infestations of chinchbugs may be treated with insecticides, such as Aspon with up to 90-day control, anytime they are detected. Turfgrasses should be monitored closely during droughty periods to detect infestations before injury occurs.

Both liquid and granular forms of insecticide are effective. Irrigation before treatment helps maximize control. If a low volume of spray is applied (2 gal. or less per 1,000 sq. ft.) a light syringing or irrigation immediately after treatment helps wash the insecticide off the grass plant and into the thatch where chinchbugs live. Irrigation after treatment is usually not necessary when higher volumes of spray are applied. The turf *should be* thoroughly irrigated after applying granular formulations.

NOTE - Insecticides are commonly labeled for control of both chinchbugs and sod webworms. Since summer infestations of the two pests often occur simultaneously, application of insecticide for control of one usually controls the other.

Weed Control In Ground Covers

Kent W. Kurtz
Professor of Horticulture
California Polytechnic Institute
Pomona

Highly visible plant beds require less maintenance after fumigation and application of preemergence herbicides.

Ground covers are generally referred to as plants that cover slopes, open beds or serve as border plantings and grow to one foot in height or less. Most ground covers are perennials, evergreen and have growth habits that are trailing, spreading or clumping in nature. Most ground covers require a considerable amount of work and attention during their initial period of establishment. Depending on the vigor of the species and how rapidly they cover the ground, they are usually planted at spacings ranging from 12 to 36 inches. The popularity of ground covers in the urban landscape is due primarily to the wide array of different textures and colors available. Ground cover popularity is also determined on the uniformity, density and attractiveness of the plant material in covering open soil areas.

During the period when new plantings are becoming established, sunlight has the opportunity to reach the open soil areas and this favors the growth of weeds. Weeds thrive and compete with the ground covers for available moisture, nutrients and sunlight. Whenever the ground cover reaches the proper density and thickness, it shades the open soil surface thereby eliminating the environment for sprouting annual weed seeds. The most troublesome weeds are the perennials which include several grasses and broadleaf types. Perennial weeds require a sound program of weed control and management. To be effective, weed control in ground covers should utilize management techniques designed to reduce the weed population. These techniques include a thorough pre-plant clean-up, proper selection of the correct plant material, mechanical cultivation, and various types of mulches and chemical treatments.

Sound Cultural Practices First

The landscape manager should first utilize sound cultural practices such as thorough cultivation and removal of debris from the site selected. This should be followed by one or several irrigations to allow weed seeds to germinate and then additional cultivation to exhaust the seed reservoir in the soil. Weeds that are more difficult to eradicate may require a post emergent herbicide or fumigation in addition to the cultivation.

Pre-plant

FUMIGATION. Fumigation may be used to kill seedlings of both annual and perennial weeds and weed seeds in the soil on both new sites and in established plantings. This method usually destroys the growth of any plants in the area so clean, fresh plant material is required to replant the ground cover bed. Fumigation is not recommended on slopes since the gas moves down the slope and does not control seeds at the top. Materials used for fumigation are limited to two materials: Methyl bromide (a highly toxic gas that requires a covering of a gas-tight plastic material) and metham (Vapam® which is a liquid material that is mixed with water and may require a vapor-proof covering like water). Methyl bromide must be applied by certified pesticide applicators.

Post-plant

PREEMERGENCE CONTROL. Preemergence herbicides control primarily annual weeds as they are germinating from seed. Some are applied directly to the soil surface while others work best if they are incorporated into the soil. Many preemergence herbicides can affect the rooting ability of the ground cover, therefore, it is important to place the plant deep enough to avoid the chemical from coming into contact with the plant's root system.

Several compounds are recommended for preemergence control of weeds in ground covers; including Devrinol and Eptam®.

Postemergence Control

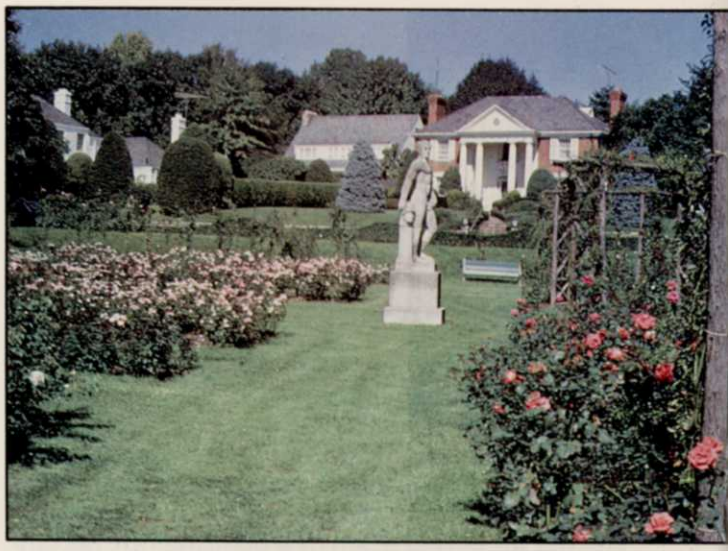
Since mechanical cultivation will not control or eliminate many perennial weeds, a postemergence herbicide may be necessary to reduce the weed population. Basically there are two herbicides which are used to control persistent perennial grasses such as Quackgrass, Dallisgrass, johnsongrass and bermudagrass and these include: Glyphosate (Roundup® systemic weed and grass killer) and dalapon (Dowpon®). However, it should not be applied over the top of most ground covers.

The herbicide diphenamid (Enide®) may sometimes be used also as a post-emergence control for young grasses if the plants do not exceed 3 inches in height. Additionally, two commercial fertilizers are sometimes used to control weeds in specific ground covers such as iceplant (Carpobrotus edulis). These fertilizers include ammonium sulphate and magnesium chloride.

GARDEN FUMIGATION

New opportunity in landscape maintenance.

Francis R. Gouin
Department of Horticulture
University of Maryland
College Park, Md. 20742



Most homeowners don't have gardens like this, but they might welcome assistance with weed control from landscape maintenance firms in their gardens.

All newly established gardens are plagued with weeds and soil born insects during their first 2 to 3 years of establishment. Turning under of sod or debris from neglected gardens is certain to create severe weed and grub or wireworm problems especially during the first year of gardening unless the soil is fumigated.

Our soils are infested with billions of weed seeds, roots and bulbs of perennial weeds and eggs or larvae of insects. Soils that have been gardened with the same crops for many years often become infected with virulent strains of fungus organisms that reduce yields.

Plowing, liming, fertilizing or adding compost to garden soils all make conditions favorable for seeds, roots and bulbs of annual and perennial weeds to germinate and grow. The most effective immediate control of such weed problems is to fumigate the soil before planting. Fumigating will also kill the eggs and larvae of insects, nematodes and soil born diseases. Because these fumigants are most active when soil temperatures are 60° or above, they may be applied in the fall while soils are still warm or in the spring as soon as the soil warms sufficiently.

Soil fumigants, such as Vapam, have been used for many years by nurserymen, growers of small fruits and vegetables. Soil fumigants leave no residues when they are properly used at recommended temperatures and aerated as recommended by the manufacturers. For maximum effectiveness, the soil should be thoroughly tilled, lime and compost amendments added before fumigating. After the soil has been fumigated and aerated, care should be taken to avoid digging deeply into the soil to prevent bringing to the surface unsterilized soil. Depending on the method of sterilization, only a 6" to 8" layer of soil is sterilized. Care should be taken to avoid sterilizing soils near desirable plants. Soil fumigants are nonselective and will kill desirable as well as undesirable plants.

The cost of fumigating soil is relatively inexpensive when one considers the advantages of weed free gardening and the increase in yields that have been reported. There are no weeds to compete with the desirable plants for water, nutrients and light; no insects to chew the roots or eat the stems; and no diseases to infect the roots and kill the plants.

Fumigating home owner gardens could be a new income source for landscapers and lawn care professionals. The suburban dweller in most cases would prefer a service perform this duty for a fair fee.

VAPAM® GOES UNDERGROUND TO HELP YOU DIG UP NEW PROFITS.

Your customers may not know there's a simple way you can wipe out the weeds, diseases, nematodes and insects that lurk underground in their gardens.

Now you can help them clean out these pests with one application of Vapam soil fumigant. It's easy to apply. And it's a new way for you to increase your income and the services you offer. Cost to you is only about $10 for enough Vapam to treat a 20' x 20' area. And you'll have no problem profitably billing your clients for this simple but valuable service.

You can do it easily with a hose-end sprayer — or even a watering can. Just apply two weeks ahead of time to put seed or plants into the garden. And always use Vapam before you do new landscape plantings. It'll pay off in better looking landscaping.

Make cleaning your customers' gardens — even vegetable gardens — one of your regular services. Show your customers how you can help them eliminate the enemies below that no one can see. But no one should ignore.

Their plants will be healthier. And you'll be wealthier.

For the name of your nearest supplier, contact the Stauffer sales office shown at left. Always follow label directions carefully.

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Circle No. 131 on Reader Inquiry Card

TREES DESERVE PROTECTION FROM HARMFUL INSECT PESTS

Insects will attack a stressed tree in the urban environment just as they will attack a sick or old tree in the forest, according to Dr. Dave Nielson, entomologist at the Ohio Agricultural Research and Development Center (OARDC) in Wooster.

"The problem," says Nielson, "is knowing when the insect population will change from harmless to destructive. "It's important to identify the harmless insects as well as the harmful ones. If you don't know, call your exte.ısion agent for advice. Then apply insecticides when insects reach a harmful level."

Some of the harmful insects reaching serious populations are the gypsy moth, Japanese beetle, birch leaf miner, eastern tent caterpillar, elm leaf beetle, the spring cankerworm and the elm span worm. All of these harmful insects can be controlled with applications of Imidan® from Stauffer Chemical Company, Sevin®, malathion, diazinon, Dursban®, Orthene® or Dipel®.

"Imidan is fairly new to the arborist, but it has a successful record in the fruit growing area," says Dr. Richard Miller, extension entomologist at Ohio State University in Columbus. "it made its debut in fruit, controlling codling moth, green apple aphid, maggots and others. It is a relatively safe material and covers a pretty good range of insects for the arborist and the pesticide applicator of landscapes. One of its greatest benefits is its safety to the user as well as to beneficial insects. That's important to an up-to-date insect control program."

Insect control is a major part of tree care. Many countries around the world put a higher price on the value of trees than here in North America. In Vienna, Austria, you can be fined as much as $25,000 if you are caught chopping down a tree that isn't yours.

Landscape architects in this country say a well-placed, mature shade tree in good condition adds more than $1,000 to the value of a home. Studies show a thick evergreen windbreak can block out noise pollution from a busy street, hide an eyesore, and save nearly 25 percent on winter heating bills. Customers should be educated to the value of trees and ornamentals. They should be calling you to solve a problem rather than a fence company.

Once they know you'll apply insecticides only when necessary and use insecticides that are safer than others, they'll trust their valuable trees and shrubs to you for other services.

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Arborists and tree care companies guard 20 percent of the value of their customers' property.

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Not from landscaping or ground maintenance, but from call backs for weeds in ornamentals. Which is what Devrinol® herbicide protects you against.

With remarkable safety to flowers, shrubs and trees, one application in the spring (or fall) keeps weeds out for months. And that keeps you out of ornamentals for months.

Devrinol delivers long-lasting control because it resists leaching in rain, and chemical breakdown when the weather heats up.

So take a vacation from weeds. Apply Devrinol to ornamentals once. And maybe spend the time pitching new customers instead.

Stauffer Chemical Company, Agricultural Chemical Division, Westport, CT 06881. Follow label directions.

Stauffer CHEMICALS **DEVRINOL**

THE ONCE-IS-ENOUGH WEED CONTROL

Circle No. 220 on Reader Inquiry Card

Stauffer Chemical Company
Agricultural Chemical Division
Westport, Connecticut 06880

***Sod webworm resistant plots** of perennial ryegrass stand out at Rutgers test site.*

Insect Resistant Turf

Presence of endophytic fungi in ryegrass show increased insect resistance.

Seed companies may be able to help managers of golf course and landscape turf in the near future by enhancing the insect resistance of ryegrass.

Recent discoveries by Dr. C. Reed Funk of Rutgers University and others have established resistance to bill bugs and sod webworms by ryegrass when endophytic fungi are present in plant tissue. The fungi were first found in ryegrass in New Zealand in the 1940's. New Zealand scientists have since noticed ryegrass containing the fungi resisted attack by the Argentine stem weevil.

Dr. William Meyer, well-known turf breeder for Turf Seed, Inc., Hubbard, Oregon, believes the viability of the fungi may be affected by storing seed more than one year after production. He says this may require seed producers to start new generations of breeder and foundation seed more often than currently practiced to maintain the insect resistance in the seed. The fungi is spread only by seed transmission. As Meyer states, "The discovery of the endophytic fungus in ryegrass and its association with insect resistance is certainly the topic of the day."

Dr. Funk and Dr. Richard Hurley, vice president of Lofts Seed Co., Bound Brook, N.J., presented a paper to the Forage and Turfgrass Endophyte Workshop held in Oregon in May. Excerpts from their paper follow.

Recent discoveries associating the presence of endophytic fungi, living within the tissues of a host plant, with plant resistance to a number of serious insect pests will require important modifications in current methods of seed production, storage, labeling, and breeding.

The benefits of endophyte-enhanced pest resistance (EEPR) must be weighed against occasional adverse affects of endophyte containing plants on the health and performance of animals consuming such plants as a major part of their diet. We may want endophyte containing verieties in turf and other non-food plants.

Scientists working in New Zealand were the first to demonstrate an endophytic fungus was associated with resistance to the Argentine stem weevil, an important pest of pastures, turfs, small grains, and maize. They also showed non-endophyte containing plants were gradually eliminated from pastures as endophyte infected plants survived and dominated. The relationship between the fungi and perennial ryegrass is symbiotic.

Recent studies have demonstrated resistance to sod webworms attacking perennial ryegrass in New Jersey was associated with the presence of endophytic fungi. Twelve perennial ryegrasses were rated as having high resistance to sod webworms in the trials.

Resistance of perennial ryegrass to the bluegrass billbug has also been reported. It is likely such a unique resistance mechanism might well enhance resistance to many other insects and possibly fungal pathogens (diseases).

In nature, endophyte infected plants are very common in perennial ryegrass and tall fescue. Ryegrasses containing the *Lolium* endophyte have been selected from old turfs in widely separated areas of the United States. The endophyte is found in varying frequencies in commercially available perennial ryegrass cultivars.

Some popular turf type perennial ryegrass varieties had high frequencies of endophyte when they were originally released. In many instances, however, some or all of the seed lots of these varieties have lost most of the endophyte.

Endophytic fungi can be transmitted by both vegetative propagation of the host plant or through seed. It has been observed that endophyte viability can be lost by normal seed storage practices within a period of less than two years. Viability can be maintained by cold, dry storage conditions. This requires special attention to seed production, storage, and seed labeling practices. The seed industry needs to evaluate the costs versus benefits of new practices.

Plants containing certain endophytes might produce substances which could have adverse effects on the health and performance of animals consuming these plants under certain conditions. It may be necessary to limit the use of plants containing certain endophytes to non-food uses and to properly identify and label such materials.

It is possible endophytic fungi might be involved in host plant response to many additional insect, disease and neamtode pests. This makes it important to identify, stabilize, maintain, and properly label endophyte containing varieties.

Techniques for artifically inoculating plants with endophytic fungi have not been perfected to date. Such techniques would be helpful to the plant breeder but are not critical to the success of programs designed to develop and maintain endophyte containing varieties.

WTT

Endophyte Levels in Perennial Ryegrasses.

Variety	High	Moderately High	Moderate	Low
All*Star		x		
Birdie II		x		
Citation				x
Citation II	x			
Cowboy		x		
Dasher			x	
Delray			x	
Derby			x	
Diplomat				x
Elka				x
Gator				x
Linn			x	
Manhattan				x
Omega				x
Palmer			x	
Pennfine			x	
Pennant	x			
Prelude		x		
Premier		x		
Regal	x			
Repel	x			
Ranger				x
Yorktown II				x

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Manhattan II is not only beautiful, it's beautifully practical. Because of its unusual density, it actually crowds out weeds. So it needs less herbicides. And it cuts clean and sharp, with no frayed leaf tips.

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Circle No. 118 on Reader Inquiry Card

LANDSCAPE MANAGEMENT

In the Hot Seat

With condominium and apartment starts up, landscape managers strive for communication and education while balancing the need for outside landscape contracting.

As the popularity of apartment, and especially condominium living continues to grow, landscape managers are finding communication and education two of their greatest allies. Communication seems to be the key to working with the sometimes unyielding condominium boards. Education of owners and association members in making them aware the bottom line isn't always in the best interest of maintenance procedures. Good maintenance procedures can translate directly into better resale value.

Good maintenance procedures can translate directly into better resale value.

These were some of the findings of an informal survey done by WEEDS TREES & TURF among apartment and condominium landscape managers.

One thing is clear, condo and apartment landscape managers are in a hot seat. Not only are condo starts up, but on the average, condo managers are responsible for 126 acres (WT&T survey figure) pointing to the tremendous growth potential of the market. Figures from the Community Associations Institute, a national, nonprofit membership education organization for people involved in creating, managing or governing condos or homeowner associations, show condos increasing as a percentage of total new sales.

James Dowden, executive vice president of CAI, estimates some 65,000 association communities (condos and townhouse communities) in the United States with about 35,000 of those in condominiums alone.

The Avance Mortgage Corporation estimates 20 to 25 percent of all new sales this year will be in condominiums and in some areas such as Florida, California, Chicago, New York, Washington, D.C., Denver, Atlanta, Houston and Dallas, as much as 50 percent.

"Condominiums first started big in Florida and California," said Dowden. "But now, other states are catching up, especially where single family home prices have escalated past the reach of the average buyer."

The Avance Mortgage Corporation estimates 20 to 25 percent of all new sales this year will be in condominiums and in some areas . . . as much as 50 percent.

The average condominium buyer is a first-time buyer, single or a childless couple (either young or retirement age), paying under $50,000 for their unit.

Dowden said roughly two-thirds of all condos have some form of professional management, and roughly 32 percent do it through boards. The majority, he said, contract out for maintenance because the average condominium in the United States is 100 units in size, too small to justify its own landscape management staff.

Roughly two-thirds of all condos have some form of professional management, and roughly 32 percent do it through boards.

That brought up another concern that surfaced in the WT&T survey. There is increasing competition from landscape maintenance contractors. One respondent said his budgeting process had gotten more involved and complicated each year largely due to the increase in competition.

The highest rated survey categories serviced by outside landscape contractors were turf herbicide application, insecticide application, tree trimming and spraying and flower and ground cover care. Most in-house functions were turf trimming, fertilizer application, turf seeding and turf aerifying.

Tree-spraying was one of the least done in-house functions.

The majority of condo facilities own their own equipment.

continued on page 60

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Circle No. 133 on Reader Inquiry Card

LANDSCAPE MANAGEMENT

The Breakers

Henry Flagler's renaissance hotel in Palm Beach is now Joe Inman's landscape.

By Maureen Hrehocik, Associate Editor

The Ocean Course *at The Breakers is a Donald Ross design.*

Sitting majestically on the shores of the Atlantic Ocean in Palm Beach, FL, is The Breakers. The world-renowned Italian Renaissance hotel each year attracts hundreds of visitors to enjoy the lavish life it has to offer.

For Joe Inman, superintendent of golf and gardens, three of his biggest headaches are the wind, sand and surf that attract guests to the opulent resort.

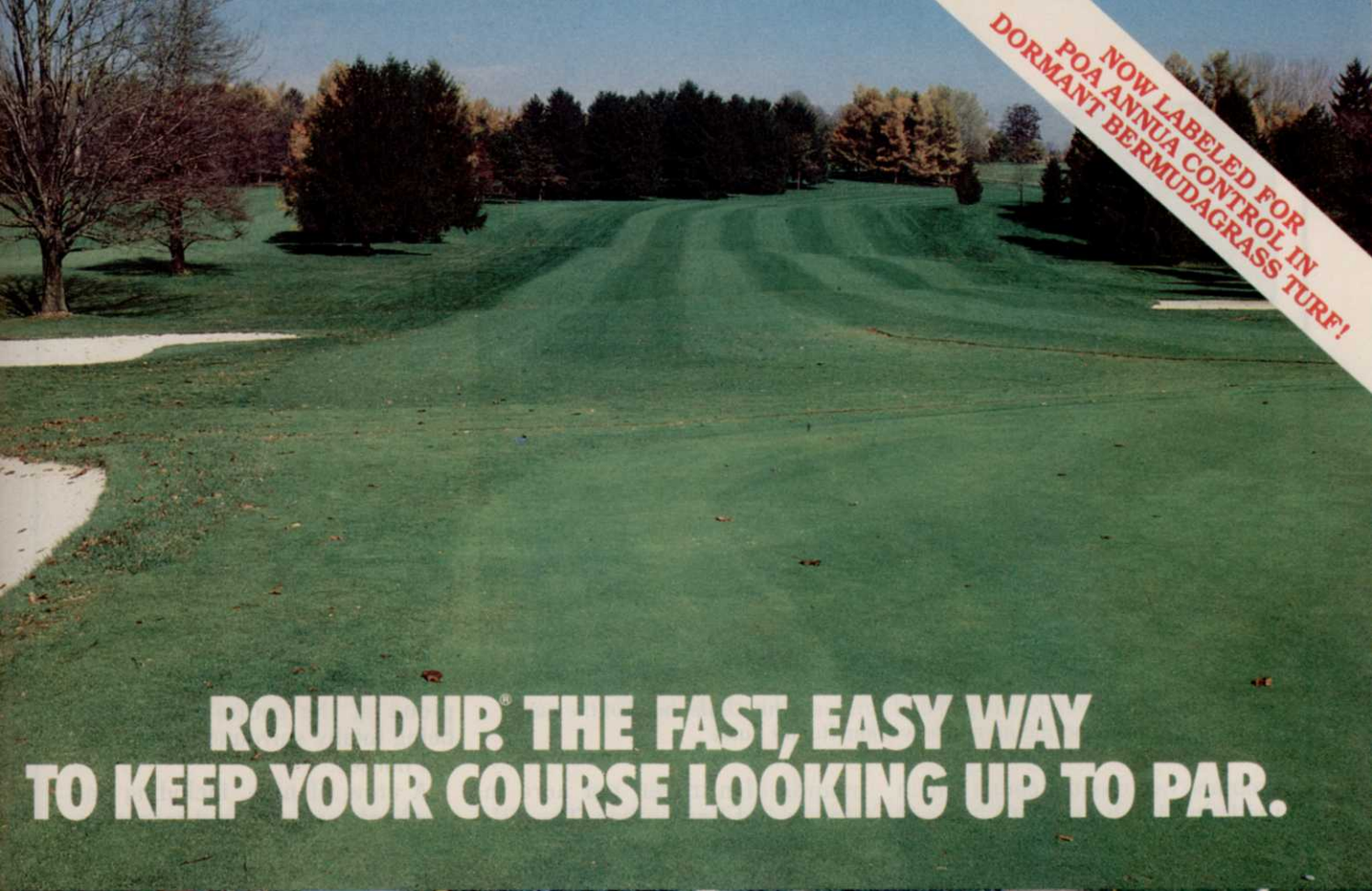
"When the wind kicks up, it carries sand all over the place and destroys many of the annuals," said Inman. "We've developed an excellent replacement program, though."

The resort is still run by descendents of Henry Flagler, railroad magnate and co-founder of the Standard Oil Company, who built the original Breakers. It burned in 1925, 12 years after Flagler's death. His third wife, Mary Lily Kenan, rebuilt it to the structure that is now standing.

With the constant problems of wind and sand, Inman uses wind and salt-resistant plant materials such as cactus, century plants and natural screens such as Australian pines.

To control erosion along the beachfront, Inman uses boulders to stop the ocean from gnawing at the beach and to keep turtles and mantarays away from hotel guests. Beach morning glories and sea oats also help prevent erosion and help with beachside weed control. Beach cleaning is contracted out. St. Augustinegrass is used along the back of the hotel. Because of salt damage, about 1,000 square feet must be replaced annually.

Inman says caring for the 95 acres of hotel property (65 acres in turf maintenance) around a structure that has been declared a National Landmark and is listed on the National Register of Historic Places, is an ideal job for him. He is responsible for the hotel



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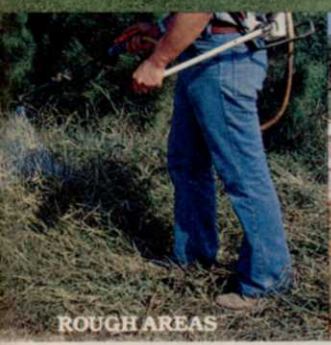
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Circle No. 136 on Reader Inquiry Card

Joe Inman, *superintendent of golf and gardens; Chip Guile, head of the nursery and grounds; and maintenance worker Randy Latta.*

grounds, two croquet courts which the Palm Beach Croquet Club uses as its home court, nine clay and five all-weather tennis courts and two golf courses, each with its own superintendent.

His work obviously agrees with him. With a pleasant disposition and quick smile, he takes a laid-back approach to managing his staff. The beauty of the grounds reflects more than efficient turf management. There, among the formal gardens and carefully manicured lawns, is an unmistakeable amount of pride in the men who do the work so many come to admire.

"I love my work," Inman says. "The key is getting everything down to a system."

An innovation that Inman and Chip Guile, head of the nursery and grounds, devised is a "spaghetti" irrigation system for the main circular garden in front of the hotel. The garden contains 300 potted plants and each has its own individual spaghetti-like watering hose, fed from the central irrigation system. Inman likes the ease of replacing individually-potted plants.

Breakers West is the largest of the two golf courses with 125 acres to be mowed (250 total acres.) One hundred acres of Tifway 419 fairways and tees are fertilized with 96 pounds of nitrogen per acre in March and September. The Tifdwarf greens are fertilized with two pounds of nitrogen a month. A urea, water soluble fertilizer plus fungicide applied weekly is used in the winter (46-0-0) and sulfur coated urea (19-4-10) in the summer.

Superintendent John Baute says his main problem is water.

"Last year we had too much water, this spring we had too little," he said.

"Because this isn't a private club, we're open 365 days a year which makes maintenance a little harder," he continued. "We also have transient players here for the most part that may not take care of the course as well as members would."

"I love my work," Inman says. "The key is getting everything down to a system."

Baute says he's particularly proud of the course's location—being totally surrounded by trees, not houses.

A crew of nine, including one mechanic and one cart mechanic, care for Breakers West.

Bill Remy is superintendent of the Ocean Course, directly adjacent to the hotel. It is one of the oldest courses in Florida. It was designed by Donald Ross and is the site every spring of the American Cancer Society Benefit Tournament. The course is 62 acres. Fifty acres are fertilized twice a year with 96 pounds per acre of nitrogen. It has 2.5 acres of Ever-

Part of Inman's *"spaghetti" irrigation system among the individually-potted plants in the main circular garden.*

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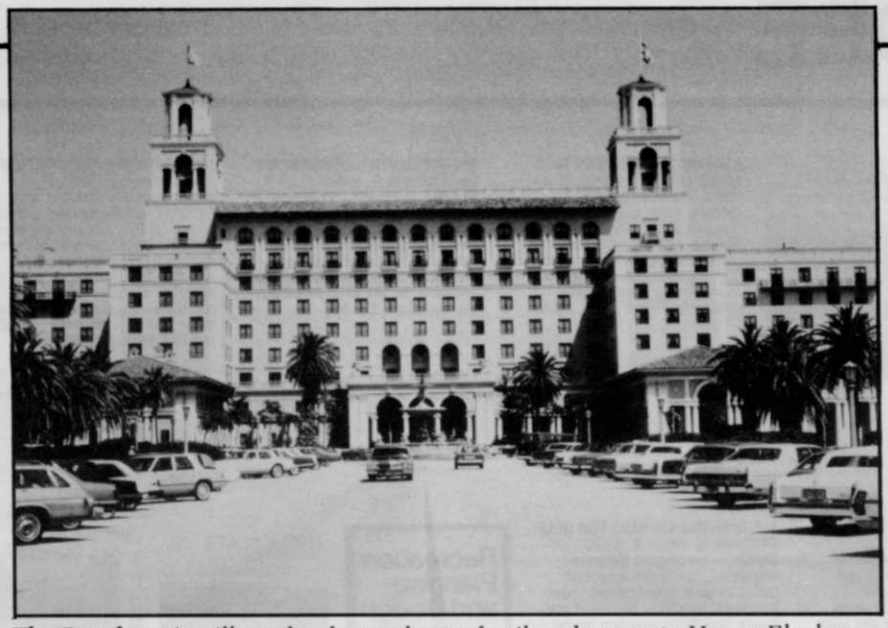

***The Breakers** is still run by descendents of railroad magnate Henry Flagler.*

glades #1 greens.

"We have the old-style elevated greens at the Ocean Course and that's something not usually found in the newly-designed courses in South Florida," he said.

The Ocean Course gets heavier play than Breakers West, possibly because it's the shorter of the two courses and is closest to the hotel. Breakers West is about 15 minutes away. Because of Palm Beach city ordinances, Remy's crews can't start mowing until 7 a.m. He also has to contend with a half automatic, half manual irrigation system.

"The manual half should be converted within the next year or two," he said.

The Ocean Course also has a crew of nine, one mechanic and one cart mechanic.

Overseeding is done the first week of December, one green at a time, so as not to disturb play. On Breakers West, Inman uses 3,500 pounds of a mix of Citation, Birdie and Omega ryegrass; on the Ocean Course, 1,500 pounds of Kentucky Bluegrass; and on the hotel grounds and golf course fairways, 10,000 pounds of annual ryegrass.

The hotel grounds has a crew of 11 and one supervisor. The grounds sport 3,500 summer annuals, including marigolds, bush daisy, canna lilly, torenia, and dusty miller. Winter annuals are begonias and geraniums. Plant beds have more than 2,000 plants, mainly hibiscus, oleander and copper leaf. Phoenix, caryota, dictyosperma, alexander, areca, royal, coconut, sabel and chamaedorea palms provide ambiance as well as homes for wild parrots. Last year, many of the palms were infected with lethal yellowing and were replaced with Malayan dwarf coconut palms. Five miles of hedges include ligustrum, exoria, crown of thorns, carissia and pittosporum. More than 500 poinsettias decorate the front foyer for Christmas, and at Easter time 325 individually-potted hydrangeas are on view. All potted annuals are bought through a local supplier.

With the constant problems of wind and sand, Inman uses wind and salt-resistant plant materials such as cactus, century plants and natural screens such as Australian pines.

Inman's insect control program is curative rather than preventative. On the golf courses he has problems with sod webworm and army worms and uses Sevin and Dursban to keep them under control. His worst problem, however, is mole crickets.

"We had a lot of rain last year which drowned many of the larvae, so the problem shouldn't be as bad this year," he said. Oftanol usually keeps them under control. The frequency with which he replaces plants also acts as a check on insects.

Most of Inman's equipment is Toro.

He has six Toro Greensmaster 3s, two TurfPro 84s, two Groundsmaster 72s, a Rake-O-Vac and vacuum blower. His sweeper and trim mower are Jacobsen.

"We don't use rotary mowers on Bermudagrass," Inman said. "We want a hand look without hand labor."

His 300-plus equipment list includes two Dedoes aerifiers, a Ryan Greensaire, Bean turf sprayers (125 and 300-gallon capacities), a Ditch Witch trencher, Ryan sodcutter, Asplundh bush chipper and Cushman trucksters. His machinery is trucked between golf courses.

"I have a very good relationship with distributors," Inman said. "They've even let me try certain pieces of equipment, and in general, are very cooperative."

Breakers West is irrigated with a Toro Vari-Time 690 Series automatic sprinkling system powered by two, 50 hp centrifugal pumps fed from lakes and wells. The Ocean Course is automatic with Moody controllers and Rainbird heads for nine holes. The other nine are irrigated with a galvanized pipe and quick-coupler system. It uses city water and Inman said water bills can run as high as a couple of thousand dollars a month. The hotel grounds used to be hand watered and with sprinklers. Now, it is on a semi-automatic system.

"Eventually, we hope to put it on timers," Inman said.

About 600 yards of premix 70/30 soil and 50 bales of peat moss are

continued on page 60

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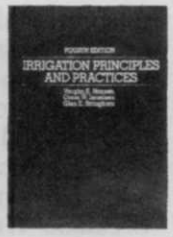

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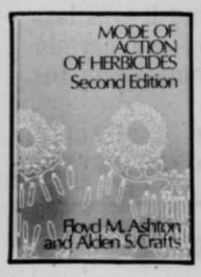

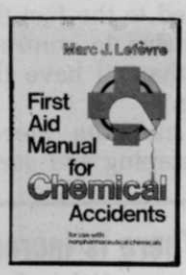

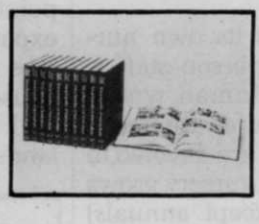

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BREAKERS *from page 55*

used a year on the golf courses and in flower beds.

The Breakers has its own nursery, but the three-person staff is only half the size Inman would like it to be. Three acres are under shade and five acres are devoted to container stock. The nursery grows most everything (except annuals) that's found on the hotel grounds, including palm trees.

Overseeding is done the first week of December, one green at a time, so as not to disturb play.

Inman works on a budget of over $500,000. "In one respect I have no budget," he explains, "If I have a legitimate expense, we usually buy it."

Inman started out as a business major at the University of South Carolina, but left after two years to become the golf pro at Camp Lejeune, NC, where he stayed for four years. That was only the start of being a golf pro at such courses as Sea Pines Plantation at Hilton Head, SC; Yeaman's Hall Club, Charleston, SC; and the Surf, Golf and Beach Club at Myrtle Beach, SC. He taught golf at Patrick AFB in Cocoa Beach. In 1976, he enrolled at Lake City Community College in Lake City, FL, and graduated with an Associate's Degree in Golf Course Operations. In 1979, he came to The Breakers working in the nursery and then was promoted to assistant superintendent at Breakers West. In Sept. 1981, he was named superintendent of golf and gardens.

"Ideally, I would like to be in a position where I can be a golf pro and a superintendent," he said. "Some clubs are calling them golf managers."

At age 41, Inman is doing what he likes to do. He's in a satisfying career, golfs about once a month (he's a 3 handicap golfer) and is an amateur photo buff.

"My ego and self-esteem here are very satisfied," he says. **WTT**

HOT SEAT *from page 48*

Some respondents, however, pointed to the fact that it was less expensive to contract out certain jobs than to have them done in-house.

"I can see more contracted landscaping and gardening in the future because of cost," said one manager.

There is increasing competition from landscape maintenance contractors.

In the majority of cases, the landscape supervisor specifies the landscape program and the purchase of chemicals. Budget planning is done mainly from September to January.

Survey results show very low participation in landscape associations or organizations by apartment/condo landscape managers.

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LANDSCAPE MANAGEMENT

Hungry, Young and Friendly

In four years, Seacrest Services has become a leader in South Florida landscape maintenance

By Maureen Hrehocik
Associate Editor

In the summer, *mowing at Century Village and Leisureville is done every seven to 10 days.*

The sweet smell of success. Seacrest Management of West Palm Beach, FL, knows it well. The company, specializing in condominium/apartment landscaping, building services, janitorial and pest control, increased its business 50 percent this year to $4.5 million. The landscaping portion alone increased 316 percent; impressive statistics for a company that's only been in business four years.

Ralph Lopez, vice president of landscape operations, has been largely responsible for the impressive jump in income. The success of the landscape division is as much a personal triumph for the 31-year-old as it is a business triumph. Lopez, the son of Spanish immigrant farm workers, has always set high personal goals for himself. He has transferred that commitment to his work and has been responsible for streamlining and making cost and labor-efficient many aspects of the landscaping operation.

Lopez practices the Integrated Pest Management method of pest control, irrigates on an as-needed basis, uses only zero-turning radius mowers, and, as a rule, cuts his grass higher than most. He expects the best from his workers and usually gets it.

Seacrest holds the maintenance contract to Century Village and Leisureville, both in West Palm Beach, and each covering about 150 acres. Management sources declined giving the worth of those contracts for competitive reasons.

Century Village, according to Lopez, was the largest condominium complex in the United States when it was built in the 1970s, with 7,500 units and 15,000 residents.

Tree-trimming *is done with lightweight trucks to reduce stress on the turf.*

There is no time sharing. Seacrest also maintains 25 other condominium developments from Ft. Pierce to Ft. Lauderdale, and has recently opened a Tampa division. Total acreage under its care is between 12,000 and 18,000 acres, 600 in turf acreage. The landscape division employs 60 people.

Bill Kerns and Neil Valentine bought the company in 1978 after working for it since 1968. Lopez was promoted to vice president last year after working as landscape division manager.

Lopez says the hardest thing he has to deal with are the condominium association boards; those people living in the complex elected to protect the interest of the residents.

"The changeover of personnel on boards is high, and usually what the boards are interested in is the bottom line which isn't always in the best interest of the maintenance program," Lopez says. "They are always considering how the maintenance fee looks to the potential buyer. Everyone is a resident expert (about maintenance). Trimming a tree can be traumatic."

The largest part of the maintenance fee at Century Village and Leisureville goes towards mowing.

What compounds the problem is that Lopez believes that in South Florida, the landscaping contributes greatly to the salability of the property.

"Most of the time, the board doesn't know what it takes to maintain property properly," he said.

Proper maintenance is no stranger to Lopez.

"With the Integrated Pest Management method, we treat on an as-needed basis and that way we have less chemicals in the atmosphere. It's also safer for the residents."

At the new Tampa division, mole crickets are a problem.

Two years ago, South Florida experienced a severe drought. Lopez began cutting his lawns higher and less frequently. He also used a slow release fertilizer. He changes his mower blades twice a day to get a good cut. His zero-turning radius Hustler, Heckendorn, Grasshopper and Dixon mowers give him the kind of maneuverability apartment and condominium care requires. He also has a prototype Heckendorn zero-radius mower with 91-inch "bat wings" that can mow in a zero radius of 54 inches. The machine is worth $11,000.

Ralph Lopez, *vice president of landscape operations for Seacrest Services, sits on the firm's prototype Heckendorn zero-radius mower with 91 inch "bat wings."*

"We have the best of everything—mowers, people, management, and blend it to make a hybrid landscape maintenance firm."—Lopez

Cherry hedge and ficus are the predominant plants used at Century Village and Leisureville because of their disease-resistance and low maintenance. While some bahiagrass is used, St. Augustine is the predominant grass. Lopez contends with diseases and brown patch by using Daconil and Captan. Cutting height is 3 to 3½ inches.

"We go for structure here, not esthetics," Lopez says. "We try to put as little stress on the turf as possible."

His cutting schedule is dictated by the condominium contracts, but during the summer, mowing is usually done every seven to 10 days, in the fall and spring, every 14 days, and in the winter, once a month.

Lopez uses a 100 percent slow release sulphur-coated urea fertilizer.

"The leaching effect provides a good, even green all-year round," he says. "Some people think it's cost prohibitive to use, but you use less in the long run because it's concentrated. Having to spread less fertilizer also means a savings in time and labor costs."

He fertilizes in the spring and fall and uses a 24-4-15 mixture in the summer.

"We change the analysis with the climatic conditions."

No selective herbicides are used at Leisureville or Century Village to take care of the torpedo, nut and bullgrass problems.

Irrigation on both properties is done from man-made lakes fed from the flood control districts. Century Village is irrigated manually. Leisureville is manual but is being converted to automatic because of problems with line breaks.

Palm Beach County takes care of flying insect control. Seacrest does do ground spraying around walks and households.

Bad drainage and trees planted by developers without their full growth potential in mind are continuing problems for Lopez.

Most of the trucks in the 50-vehicle Seacrest fleet are Mazdas. Lopez has Chevrolet and Ford cherry pickers with hydraulic buckets. Seacrest also buys used Bell Telephone trucks because they're light enough to be driven on lawns. Because of using the IPM method of pest control, Lopez's Swift 300-gallon sprayer truck is sufficient for his needs. He also has the usual assortment of string trimmers, leaf blowers and edgers. The company employs a full-time entomologist, Terry Lyons, and arborist, Ron Cower.

Seacrest prides itself on the type of working environment it provides for its employees. Incentive and hard work pay off in a variety of ways.

"We take a professional approach to everything," Lopez says.

"Follow-up is very important."

Seacrest material are people who are "hungry, young and friendly." Operational meetings are held twice a month for supervisors and foremen to clear up problems and "rap."

"I treat my people the way I'd like to be treated," Lopez says.

When a customer calls in to commend a worker for a job, the call gets posted on a "motivator board," that way everyone notices a job well done. Even the Seacrest shirts are incentive-oriented—non-supervisory personnel wear tee-shirts, supervisors have collared shirts. Picnics, softball games, Christmas parties and get-togethers help cement the family atmosphere Seacrest is proud of.

"We have the best of everything—mowers, people, management, and blend it to make a hybrid landscape maintenance firm," Lopez says.

Lopez himself is somewhat of a hybrid. With no formal landscape or management training, he credits all of his landscape knowledge to the University of Florida Extension Service.

Lopez says the hardest thing he has to deal with are the condominium association boards.

"They have always been there when I needed them," he says. "I love this business and it will always be a part of my life."

His responsibilities at Seacrest include assisting the five-member sales department, doing proposals, public relations, buying equipment, setting up projects, doing time studies and keeping the lines of communication open in the company. He is a member of the Florida Turfgrass Association, Florida Pest Control Association, Florida Grounds Maintenance Association and is on the Horticultural Advisory Board for the Palm Beach County Extension Service.

Lopez has worked as an estate groundskeeper and had a gardening and landscape business with his brother. But it's at Seacrest that he is realizing his real potential.

He readily admits he is not a "fat cat executive" and prefers to be outdoors driving tractors and "smelling freshly cut grass and grease on lawnmowers."

"I like to be at the pulse center of what's happening, not in an office somewhere," he says.

He's also a man who doesn't like to dwell on past accomplishments. Lopez has already set a new goal he'd like to help the company reach by 1984—that of doing $5 million in business. With his past track record, he is well on the way to helping Seacrest realize it. **WTT**

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ENGINE SURVIVAL IN THE SUMMER SUN

The August sunshine presents some real "health" problems for the air-cooled engine. Some special attention to maintenance during hot weather can help avoid engine "sunstroke."

Heat and dirt are the major causes of air-cooled engine failure. Warm air is less effective in engine cooling than cooler air. Therefore, when ambient temperatures are high, it is important that as much air as possible get to the fins on the cylinder and head.

The shrouds that direct the cooling air must be in place and the grass screen over the flywheel must be kept open. Also, the fins on the cylinder and cylinder head must be kept clean. This will be more difficult in the hot and dry summer months because grass clippings will be dryer, lighter, and drawn in with the cooling air more easily.

Engine oil also keeps engines cool in two ways. Its lubricating property reduces heat from friction and the oil also serves as a heat sink. High quality engine oil with an API rating of SC, SD, SE, or SF and the viscosity rating of SAE 30 is recommended for hot weather operation. Check the engine oil level before each engine operation and every five hours thereafter. Keep the level at the full mark, but don't overfill.

Dirt destroys engines and in hot and dry weather there is much more dust and dirt in the air. It is critical that the air cleaner be given more frequent attention. Wash oiled foam air cleaners in detergent and water, rinse, and dry. Re-oil with a generous amount of the same oil as is used in the engine crankcase. Paper elements should be cleaned by tapping on a clean surface. Don't use compressed air to clean paper element air cleaners since a hole could be blown in the filter. If tapping won't clean it, replace it with a genuine replacement filter supplied by the engine manufacturer.

Air cleaners that combine a paper element and an oil soaked sponge are particularly effective and are available for most air-cooled engines.

Attention to air cleaners, oil, and cooling systems is inexpensive and takes little time but will pay big dividends in avoiding engine "sunstroke."

Joseph M. Whalen
Manager of Technical Services
Wisconsin Magneto
Milwaukee, Wisconsin

Due to dust, *seeds, grass clippings, etc. attention to air cleaners is particularly important in summer months.*

Scientific Guide To Pest Control Operations

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WTT 83

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WT&T PROBLEM SOLVERS

By Balakrishna Rao, Ph.D.

Q: *I would appreciate it if you would furnish names of flowering plants which have a fragrance. We are interested in using these in landscape design. Please also mention some books or references on this subject. (Ohio)*

A: Your idea of including fragrant flowers with plants is very creative. Because of the space limitations, I will furnish the following reference sources which you might find interesting and helpful in your line of work.

1. *Plants for Fragrance*, Ohio State University Cooperative Extension Service, Publication No. L-243.
2. *Flowering Shrubs for Fragrance*, Morton Arboretum, Bulletin for Popular Information, Volume 13, No. 7, July 1938.
3. *Shrubs and Vines for American Gardens*, Donald Wyman, MacMillan Publishing Company, Inc., New York 10022.

Q: *Whom should we contact in case of a pesticide spill? (West Virginia)*

A: Pesticide spills or leaks should be handled effectively and promptly. In case of a pesticide spill, you can call several numbers for guidelines on clean up and decontamination.

You should notify the state department of agriculture for your particular state of any pesticide spills or leaks. In your case, the West Virginia Department of Agriculture (304-348-2213) should be notified.

In addition, you should also notify the following agencies, depending upon the problem.

1. National Response Center (NRC) (800) 424-8802 - The NRC should be notified if a pesticide spill or accident occurs on a highway. They will in turn notify the proper authorities.

2. CHEMTREC (Chemical Transportation Emergency Center) and National Agricultural Chemicals Association (NACA) (800) 424-9300 - The CHEMTREC consultation team can assist you in providing identification of chemicals, safety guidelines, and manufacturer's emergency phone numbers. The NACA can give you technical advice on pesticides and telephone numbers of manufacturers. If clean up is needed, NACA can assist in getting in touch with the people who are equipped to clean up pesticides spills.

Keep these important numbers in easily accessible places and also in the pesticide spray truck for any emergency situation.

Q: *This spring we treated a number of lawns with Roundup for renovation. About mid-May when we visited the lawns for seeding we found a lot of broadleaf weeds. I am surprised by the results and so are the upset clients. Please help me—what might I have done wrong? (Michigan)*

A: From your statement I assume that your Roundup treatment took care of all the turfgrass in the lawn. Even though this is frustrating, the broadleaf weed problem you are experiencing in Roundup-treated lawns has also been experienced by others. The following explanation might help you to better understand the situation.

I feel that your Roundup treatment worked well enough and it killed everything that was "green" in the lawn at the time of application. However, the weeds germinated later on and now present a problem. Recognize the fact that Roundup should kill all of the green vegetation in the lawn when contacted by direct spraying. It will break down in the soil and thus it does not have preemergent activity on ungerminated seeds or unaffected underground plant parts. Another explanation is that you might have accidently missed a few areas. In that case, you should also see unaffected turfgrass along with weeds.

Q: *I have read that large tree limbs fall off or are spontaneously shed when the temperature is extremely hot. Is this true? (California)*

A: In checking literature, I have found that this can happen. Dr. R. Harris, of the University of California, has been collecting information on this phenomenon for years.

"High temperature limb breakage" or "summer branch drop" are terms used to describe the situation where apparently sound branches fail when it is hot and humid. Overmature and senescent trees are more susceptible to this condition than young, vigorously-growing trees of the same species. Oak, elm, pine, London plane, poplar and willow are some of the species involved. Limbs that fall are usually large in diameter, long and horizontal to the ground. The break occurs out on the limb rather than at the crotch.

Why limbs break or shed under the conditions you describe is not known. Shortening large scaffold limbs which hang over buildings or pedestrian areas is suggested.

Q: *Some of our clients have shaded lawns with poor turfgrass growth. Annual bluegrass is presenting a serious problem in these situations and we are interested in seeding the areas with shade-tolerant mixes. Our clients want a GUARANTEE on annual bluegrass control. Is there any preemergent material which can be used to control annual bluegrass? (Pennsylvania)*

A: The problem you are dealing with (established annual bluegrass under a shaded environment) is a difficult one. Make sure you prepare good seed beds and seed the area with shade-tolerant, aggressive cultivars. Follow good establishment procedures and cultural practices to discourage annual bluegrass from establishing from seed. Reducing the amount of shade should favor the growth of desirable grasses.

I think your clients are asking too much in wanting a guarantee on control of annual bluegrass. Because of the shade environment and the history of

annual bluegrass in the lawn, it would present a problem in the future and, thus, it would be difficult to give any guarantee on the job.

There is no herbicide on the market that will provide satisfactory control of annual bluegrass in lawns. Preemergent herbicides will help to prevent new seedlings from growing but will not kill established plants. Annual bluegrass is a short-lived plant which usually begins growth in late summer or early fall from seed. Application for annual bluegrass control should be made in late summer and spring. Follow the directions on the label for application rates.

Advise the client not to expect complete elimination of annual bluegrass with herbicides alone. Emphasize the importance of maintaining good cultural practices to help manage the problem.

Balakrishna Rao is plant pathologist for Davey Tree Expert Co., Kent, OH.

Questions should be mailed to Problem Solver, Weeds Trees & Turf, 7500 Old Oak Boulevard, Cleveland, Ohio 44130. Please allow 2-3 months for an answer to appear in the magazine.

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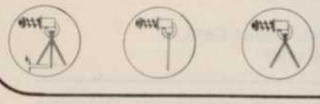

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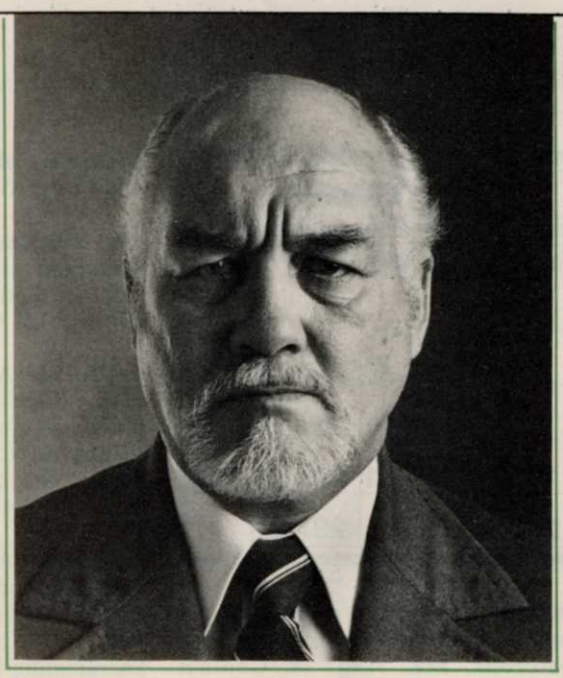

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EVENTS

SEPTEMBER

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

Maine Nurserymen's Association Summer Picnic, Wassamki Springs, Westbrook, ME. **Aug. 14.** Contact Richard Churchill, Executive Secretary PST/SMVTI, South Portland, ME 04106. (207) 799-7303.

International Society of Arboriculture Annual Conference, Indianapolis, IN **July 14-18.**

1983 Ornamentals Northwest Seminars, Portland, ME **Aug. 26-28.**

University of Rhode Island Turfgrass Field Day, Kingston, RI. **Aug. 31.**

East Lansing Turfgrass Field Day, Michigan State University. **Sept. 1.** Contact Paul E. Rieke, MSU, East Lansing, MI 48824

California Association of Nurserymen, Pacific Horticultural Trade Show, Anaheim Convention Center, Anaheim, CA **Sept. 8-10.** Contact CAN, 1419 21st St., Sacramento, CA 95814. (916) 448-2881.

California Association of Nurserymen Convention, Lake Arrowhead Hilton Lodge, Lake Arrowhead, CA. **Sept. 11-13.** Contact CAN, 1419 21st St., Sacramento, CA 95814 (916) 448-2881.

Interior Plantscape Association Fifth Annual Conference and Trade Show, Diplomat Hotel, Hollywood, FL. **Sept. 11-14.** Contact Ann Sher, National Headquarters Office, 11800 Sunrise Valley Dr., Reston, VA 22091 (703) 476-8550.

California Association of Nurserymen Horticultural Study Tour, South Africa, **Sept. 21-Oct. 12.** Contact CAN 1419 21st St., Sacramento, CA 95814 (916) 448-2881.

Virginia Cooperative Extension Service Turfgrass Field Days, Blacksburg, VA. **Sept. 27-29.** Contact J.R. Hall, VPI&SU Agronomy Dept., Blacksburg, VA 24061. (703) 961-5797.

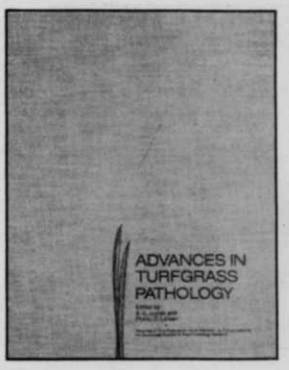
International Pesticide Applicators Association 1983 Annual Convention, Tigard, OR. **Sept. 28-30.** Contact IPAA, c/o Grass Spray Service, Inc., PO Box 2523, Eugene, OR 97402.

The New York Botanical Garden, "The New Perennials," **Oct. 1.** Contact NYBG, Cindee Howard, Assistant to the director of Education, Bronx, NY 10458, (212) 220-8700.

To insure that your event is included, please forward it, 90 days in advance, to: WEEDS TREES & TURF Events, 7500 Old Oak Boulevard, Cleveland, OH 44130.

Advances in Turfgrass Pathology

published by HARCOURT BRACE JOVANOVICH PUBLICATIONS in cooperation with Dr. B. G. Joyner, Dr. P. O. Larsen and Chemlawn Corporation



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PRODUCTS

Tool-Tainers are durable, lightweight tool boxes

Nevr-Rust Tool-Tainers are made of high density polyethylene that is unaffected by acids, moisture, alkalis, chemicals, chlorine, solvents or road salts. The heavy-duty tool boxes adjust to fit most full size and compact pick-

up trucks. Tool-Tainers weigh half as much as conventional metal boxes thus saving gas and making them easy to install. The product features special three point key locking system and weathertight construction. Tool-Tainers are guaranteed for life to never rust, scratch, dent, need painting, corrode or crack even to temperatures as low as minus 40 degrees F.

Circle No. 145 on Reader Inquiry Card

Lakeshore announces new line of products

Lakeshore Equipment and Supply Co. of Elyria, OH, is marketing 40 pound capacity rotary spreaders. The two spreaders are offered in addition to the 80 pound capacity Lesco Spreader introduced last year. One 40-pound spreader is made with a stainless steel hopper, pneumatic tires and ball bearing wheels. The other 40-pound spreader is manufactured with a green baked-on epoxy enamel on steel hopper and heavy-duty plastic wheels. The spreading spinner in both new Lesco Spreader models produces uniform spread. Rate control adjusts for precise spreading rates.

Circle No. 146 on Reader Inquiry Card

* * * *

The new Lesco Tee-Handle Soil Probes are constructed in stainless steel and come in 21 inch lengths with three quarter inch core size and 17-inch length with seven-sixteenths core size.

Circle No. 147 on Reader Inquiry Card

* * * *

The Lesco Products Division is also marketing small and large litter baskets and directional signs for use in recreational and golf course facilities. The weather-resistant cypress litter baskets have vat-dipped frames. Baskets are available with pedestals, spikes, brackets or on posts to be set in concrete. The large size basket is 20 inches by 18 by 21 inches deep and fits a standard 22-gallon trash can (not included). The small basket is 12½ inches by 11 inches by 16 inches deep and comes with one liner.

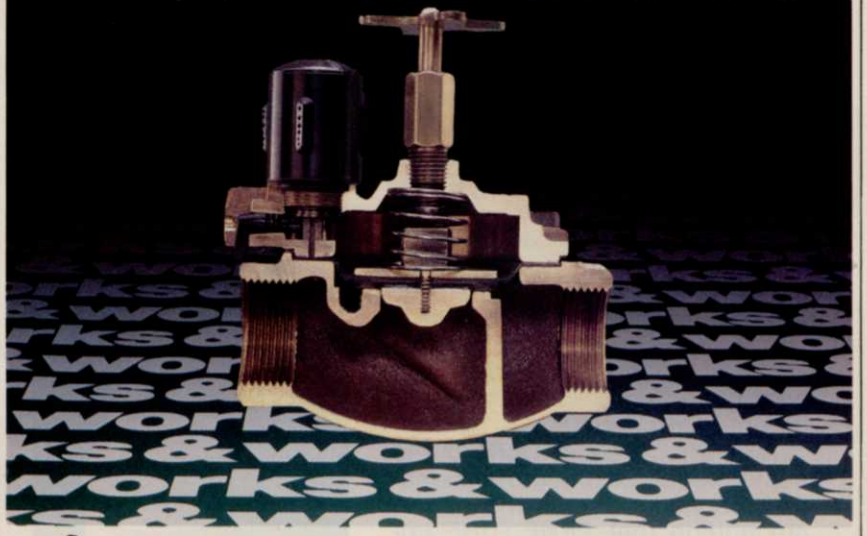
The heavy-duty polyethylene directional and informational signs are available in white or yellow and are equipped with steel spikes for convenient display. Decal messages are available separately.

Circle No. 148 on Reader Inquiry Card

Foot starting, air sweep added to Excel's BAC-VAC

A new air sweep and easy-start for the auxiliary engine have been added to the Hustler 261's 16-bushel capacity BAC-VAC Grass Vacuum attachment from Excel Industries, Inc., of Hesston,

Weather-matic



This is the famous Weather-matic valve for automatic lawn and turf irrigation systems. Our brass and glass-filled nylon models are engineered and crafted to be the standard by which other valves are judged. It's the standard of comparison because it *works*, long and hard. We know it will before it leaves our factory, for *each* one (not a "representative sample") is pressure tested to be sure.

It teams up perfectly with Weather-matic sprinkler heads, controllers and the Rain-Stat® to make the system that can't be beat.

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Circle No. 135 on Reader Inquiry Card

KS. The BAC-VAC Grass Vacuum attachment is exclusively for use on the Excel Hustler 261 lawn tractor with a 60-inch three-way mowing deck.

The new air sweep feature is located at ground level on the right side of the mower deck. It can be used to blow clippings or other debris from walks and drives. A hand lever controls the air sweep from the driver's seat. When open, it directs a strong stream of air out the side discharge port. Closed, it directs the air through the collector chute for added vacuum action.

A 5 hp auxiliary engine powers the vacuum flow to pull clippings and debris from the side of the mowing deck through a collector chute and into a 16-bushel collector bin. A two-gallon fuel tank is provided for the auxiliary engine.

The Bac-Vac is easy to use. As leaves and grass clippings are cut and vacuumed, they're deposited in the rear-mounted collector bin. The air flow continues on and through the bottom rear of the bin so dust is discharged to the rear for a clean operator environment. When the collector bin is full, a visual spinner alerts the operator. To empty it, a locking lever is released, and the bin's over-center balance dumps clippings out the rear door as the operator drives forward to continue mowing. The rear-mounted design of the BAC-VAC system doesn't hinder maneuverability of the 261. With dual hydrostatic drive and twin-lever steering, an operator can easily mow in and around obstacles.

Circle No. 149 on Reader Inquiry Card

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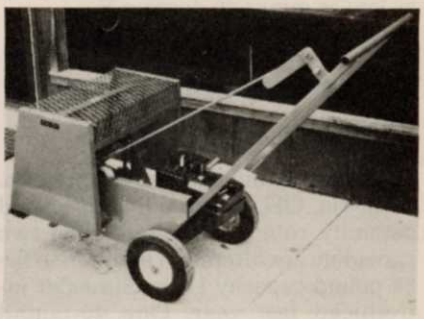
Circle No. 107 on Reader Inquiry Card

Turfco's "Turf Plugger" for lawn aeration

Turfco, Inc., has introduced a self-propelled lawn aeration machine designed for all types of soil. The Turfco "Turf Plugger" is powered by a 3 hp B&S, 4-cycle engine and is equipped with eight solid steel tines to remove a plug 9/16 inches in diameter and 1¾



inches deep. It is equipped with an adjustable clutch for easy starting and stopping. The chain-driven machine can aerate the soil at a rate of 400 square feet per minute. Another feature is the alignment of the outer tines allowing the "Turf Plugger" to operate within 2 to 3 inches of obstructions such as sidewalks, curbs and buildings.

Circle No. 150 on Reader Inquiry Card

Demise is low-odor, 2,4-D herbicide

Kalo has patented a new 2,4-D herbicide. Demise® is a non-volatile and virtually odorless herbicide which leaves no vapors.

Kalo recommends Demise® for knockdown and control of susceptible broadleaf weeds in grass turf and lawns. It is specific for common chickweed, dandelions, knotweed and plaintains.

Demise® is packaged in dry crystal form. It will not freeze in storage. Since it is concentrated, storage space is minimized. The crystals in one bag quickly and easily form enough spray solution for weed control on up to two acres.

Circle No. 151 on Reader Inquiry Card

NCA *from page 8*

ABA Section of Individual Rights and Responsibilities. In January, 1982, the ABA Section of Individual Rights and Responsibilities introduced to the House of Delegates a measure urging an amendment to the Civil Rights Act of 1964. It called on Congress to add a clause to the original legislation which specifically exempted private clubs. The ABA proposal would have brought private clubs under the 1964 Act by redefining as a "public accommodation" any private club or organization which derives a "substantial portion" of its income from business sources.

The NCA will try to defeat both of these resolutions in the ABA House of Delegates this month.

GCSAA *from page 8*

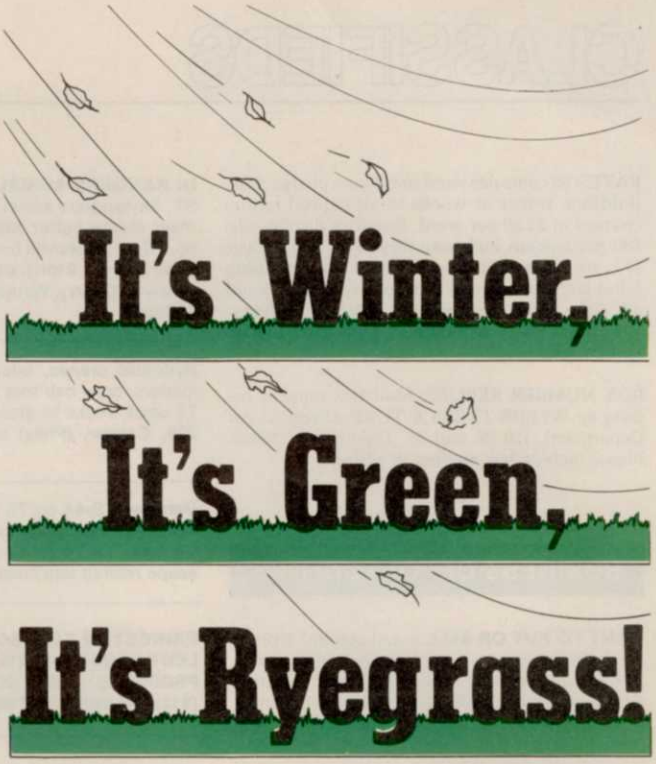
members of the Association because of educational opportunities and personal gain.

The Midwest Chapter's survey, developed by Len Berg, superintendent of Village Greens of Woodridge, Woodridge, IL, was designed as a "communications tool."

"We wanted to get some feedback from our organization on where the GCSAA is heading," Berg said. "It gives our delegates some background information."

The results of the survey follow:

1. **Do you support relocation of GCSAA Headquarters?**
   YES 54% NO 46%
2. **Do you support allocating additional efforts and time in reviewing the possibility of relocating out of Lawrence, Kansas?**
   YES 56% NO 44%
3. **GCSAA Headquarters should stay in Lawrence, Kansas.**
   YES 49% NO 51%
4. **I will always be a member of GCSAA because of educational opportunities and personal gain.**
   YES 80% NO 20%
5. **Would you attend four (4) consecutive Monday workshop sessions to review and complete the Golf Course Superintendent's Certification Exam?**
   YES 72% NO 28%
6. **Do you support the Certification Program, whether you become certified or not?**
   YES 80% NO 20%
7. **Are you aware of and do you use the many services provided by GCSAA?**
   YES 72% NO 28%
8. **Would you support hosting the G.C.S.A.A. International Conference and Show in the Chicago area?**
   YES 56% NO 44%
9. **I support the 1983 dues increase because of GCSAA involvement and leadership role in today's golf industry, plus the benefits I receive as an active member.**
   YES 64% NO 36%



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Ryegrass is cold tolerant and retains its color during the cold of winter. It responds rapidly to fertilization and quickly develops a strong root system.

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For Sale: Termite & Pest Control Business, grossing $220,000.00, high profit. Will take cash or terms available. Incorporate your Lawn Business with our list of satisfied customers. Also able to break down into 3 separate companies, price at $52,000.00, $26,000.00 and $152,000.00, buy one or all 3. Firm based in Indiana. Contact A.E.W., P.O. Box 1732, South Bend, IN 46634. 9/83

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WANTED - CHIPPER. Wanted 1 or 2 used chippers, poor to fair condition. Will pay cash. Write Jim Kohler, 2330 Seneca Drive, York, PA 17404, 717-764-5103, 717-854-1189. 8/83

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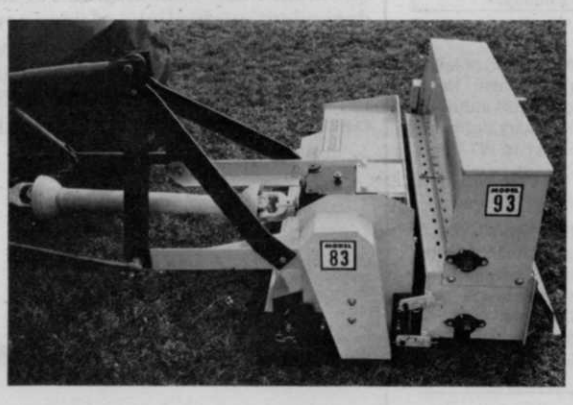

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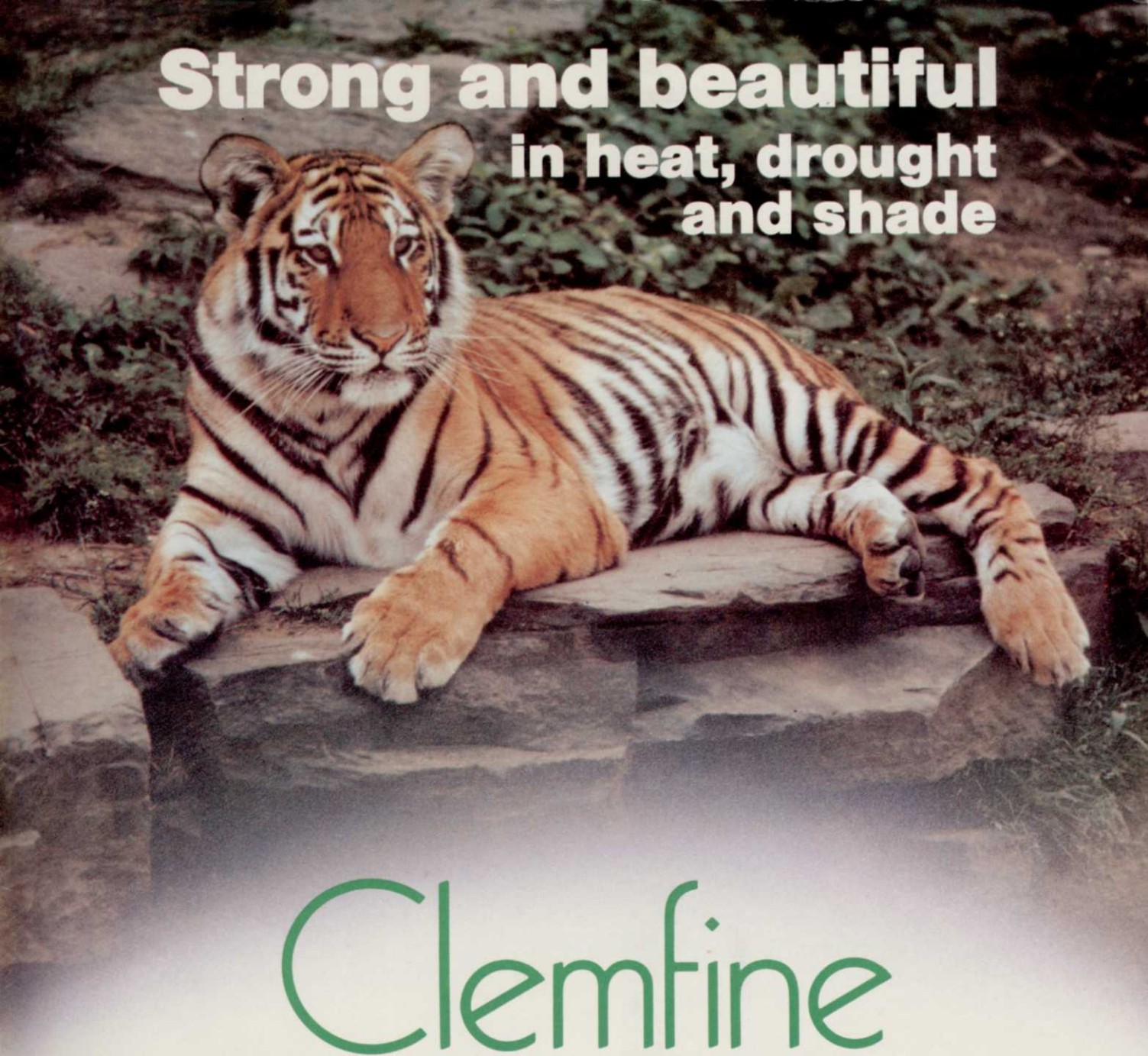

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